NEW ZEALAND DATA SHEET

1 PRODUCT NAME

Adacel®

Pertussis Vaccine-Acellular Combined with Diphtheria and Tetanus Toxoids (Adsorbed).

2 QUALITATIVE AND QUANTITATIVE COMPOSITION

Each 0.5 mL dose of Adacel contains:

Diphtheria toxoid	≥ 2 IU (2 Lf)
Tetanus toxoid	≥ 20 IU (5 Lf)*
Pertussis toxoid	2.5 micrograms
Pertussis filamentous haemagglutinin	5 micrograms
Pertactin	3 micrograms
Pertussis fimbriae 2+3	5 micrograms
Adsorbed on aluminium phosphate aluminium)	1.5 mg (equivalent to 0.33mg)

*The formulated content of 5Lf of tetanus toxoid per 0.5mL dose is the same as the related product Tripacel®.

This vaccine may contain traces of formaldehyde and glutaral which are used during the manufacturing process.

For the full list of excipients, see Section 6.1 List of excipients.

The vaccine is prepared from: purified, formaldehyde-detoxified and adsorbed diphtheria and tetanus toxins; purified, glutaral-detoxified and adsorbed pertussis toxin (pertussis toxoid or PT); purified, formaldehyde-treated and adsorbed filamentous haemagglutinin (FHA); purified and adsorbed pertactin (PRN) and co-purified and adsorbed fimbriae types 2 and 3 (FIM).

Adacel is an adult/adolescent formulation diphtheria-tetanus-acellular pertussis (dTpa) combination vaccine with reduced content of pertussis toxoid, filamentous haemagglutinin and diphtheria toxoid compared to paediatric diphtheria-tetanus-acellular pertussis (DTPa) formulations.

The manufacture of this product includes exposure to bovine materials. No evidence exists that any case of vCJD (considered to be the human form of bovine spongiform encephalopathy) has resulted from the administration of any vaccine product.

3 PHARMACEUTICAL FORM

Sterile suspension for injection. Adacel appears as a sterile, uniform, cloudy, white suspension.

4 CLINICAL PARTICULARS

4.1 Therapeutic indications

Adacel is indicated for active immunisation against tetanus, diphtheria and pertussis in persons aged 10 years and over as a booster following primary immunisation.

Adacel may be administered during pregnancy for prevention of pertussis in young infants via transplacental antibody transfer from the pregnant woman to the fetus.

4.2 Dose and method of administration

Adacel (0.5 mL) should be administered by intramuscular route.

Booster doses of Adacel should be given according to the official national recommendations as per the current Immunisation Handbook.

Consistent with the official national recommendations, in adolescents or adults with an unknown or incomplete vaccination against diphtheria, tetanus and pertussis, one dose of dTpa vaccine should be administered as part of a vaccination series against diphtheria, tetanus, and pertussis. Two additional doses of a diphtheria and tetanus containing vaccine should also be given.

Adacel can be used for repeat vaccination, after a previous dose of dTpa or dTpa-IPV to boost immunity to diphtheria, tetanus and pertussis at 5- to 10-year intervals. Repeat vaccination should be performed taking into account official national recommendations.

If Adacel is administered to a pregnant woman, it should be done according to official national recommendations for pertussis vaccination of a pregnant woman.

For further information, refer to the current Immunisation Handbook.

Administration

Inject 0.5 mL intramuscularly. The preferred site is into the deltoid muscle. The vaccine should not be injected into the gluteal area.

The vaccine’s normal appearance is a uniform, cloudy, white suspension which may sediment during storage. Shake the vial or pre-filled syringe well to uniformly distribute the suspension before withdrawing the dose.

Parenteral biological products should be inspected visually for extraneous particulate matter and/or discolouration prior to administration. If these conditions exist, the product should not be administered.

When administering a dose from a stoppered vial, do not remove either the stopper or the metal seal holding it in place. Once the vial has been opened, any of its contents not used immediately should be discarded. Aseptic technique must be used for withdrawal of the dose.

Separate syringes, separate injection sites and preferably separate limbs must be used in case of concomitant administration.

Product is for single use in one patient on one occasion only. Discard any residue.

4.3 Contraindications

Hypersensitivity

Adacel should not be administered to individuals with a history of severe allergic reaction after previous administration of the vaccine or a vaccine containing the same components or constituents.

Adacel should not be administered to individuals with a history of severe allergic reaction to any component of the vaccine (see components listed in Section 2 Qualitative and quantitative composition and Section 6.1 List of excipients).

Febrile or Acute Disease

Generally, vaccination must be postponed in cases of moderate or severe febrile and/or acute disease. Low-grade fever does not constitute a contraindication**.**

Neurological Disorders

Adacel should not be administered to individuals who experienced an encephalopathy of unknown origin within 7 days of previous immunisation with a pertussis-containing vaccine, or to individuals who have experienced other neurological complications following previous immunisation with any of the antigens in Adacel.

4.4 Special warnings and precautions for use

Hypersensitivity

Formaldehyde and glutaral have been used in the manufacturing process of this product and trace residual amounts may be present in the final product. Therefore, a hypersensitivity reaction may occur.

Administration Route Related Precautions

Do not administer by intravascular injection: ensure that the needle does not penetrate a blood vessel.

As with all injectable vaccines, the vaccine must be administered with caution to individuals with thrombocytopenia or a bleeding disorder since bleeding may occur following an intramuscular administration to these individuals.

Serious and Severe Adverse Events Related Precautions

As with all injectable vaccines, appropriate medical treatment and supervision should be readily available for immediate use in case of a rare anaphylactic reaction following the administration of vaccine. As a precautionary measure, adrenaline (epinephrine) injection (1:1,000) must be immediately available in case of unexpected anaphylactic or serious allergic reactions.

Syncope

Syncope (fainting) can occur following, or even before, administration of injectable vaccines, including Adacel. Procedures should be in place to prevent falling injury and manage syncopal reactions.

Latex

The tip caps of the prefilled syringes contain a natural rubber latex derivative, which may cause allergic reactions in latex sensitive individuals.

Neurological Disorders

If Guillain-Barré syndrome occurred within 6 weeks of receipt of prior vaccine containing tetanus toxoid, the decision to give any vaccine containing tetanus toxoid, including Adacel, should be based on careful consideration of the potential benefits and possible risks.

Adacel should not be administered to individuals with progressive or unstable neurological disorders, uncontrolled epilepsy or progressive encephalopathy until a treatment regimen has been established, the condition has stabilised and the benefit clearly outweighs the risk.

Altered Immune Status

Immunocompromised individuals (whether from disease or treatment) may not obtain the expected immune response. If possible, consideration should be given to delaying vaccination until after the completion of any immunosuppressive treatment. Nevertheless, vaccination of individuals with chronic immunodeficiency such as HIV infection is recommended even if the immune response might be limited.

Protection

As with any vaccine, immunisation with Adacel may not protect 100% of susceptible individuals.

The use of Adacel as a primary series, or to complete the primary series, has not been studied. A booster response will only be elicited in individuals who have been previously primed by vaccination or infection.

Use in the elderly

Adacel is indicated for use in the elderly.

Paediatric population

Adacel is indicated for use in children aged 10 years and over.

Adacel should not be used for primary immunisation.

Effects on laboratory tests

Interference of Adacel with laboratory and/or diagnostic tests has not been studied.

4.5 Interaction with other medicines and other forms of interaction

Adacel can be administered concomitantly with Hepatitis B vaccine, using a separate limb for the site of injection.

In a clinical trial conducted in adolescents 11 to 17 years of age, when Adacel was administered concomitantly with Menactra, antibody responses to pertussis (with the exception of PRN and FIM), tetanus and diphtheria antigens were non-inferior to those observed when each vaccine was administered separately. Geometric mean concentrations (GMCs) of antibodies to the pertussis antigens PRN and FIM were lower when Adacel was administered concomitantly with Menactra than when Adacel was administered alone. Given the strong response to all pertussis antigens across the treatment groups, and since there are no widely accepted serological correlates of protection for pertussis, the clinical significance of these lower pertussis antibody responses is unknown. The immunogenicity profile of Menactra was similar when administered concomitantly with Adacel or separately.

Separate injection sites and separate syringes must be used in case of concomitant administration.

Immunosuppressive treatment may interfere with the development of the expected immune response to Adacel. Refer to Section 4.4 - Special warnings and precautions for use.

4.6 Fertility, pregnancy and lactation

Effects on fertility

Adacel has not been evaluated for the possible effects on fertility.

Use in pregnancy

(Category A – Definition: Drugs which have been taken by a large number of pregnant women and women of childbearing age without any proven increase in the frequency of malformations or other direct or indirect harmful effects on the fetus having been observed)

Human Data

Multiple studies involving numerous pregnant women and their offspring-have generated considerable safety, immunogenicity and effectiveness data on the use of Adacel and Adacel Polio, which contains the same tetanus, diphtheria and acellular pertussis components as Adacel, primarily during the second and third trimesters of pregnancy.

Safety data are available from 4 randomised controlled trials (310 pregnancy outcomes), 6 observational studies (84,371 pregnancy outcomes) and from passive surveillance:

- Adacel and Adacel-Polio led to no more than the expected (generally mild or moderate, and usually self-limited) adverse events for pregnant women who receive it. Safety outcomes for pregnant women were very similar to those seen when these vaccines were given to non-pregnant women of childbearing age.
- Adacel and Adacel Polio have not been shown to cause harm to the fetus or newborn.
- Although some observational studies report a slight increase in chorioamnionitis when dTpa vaccine has been given to pregnant women, this has not been associated with adverse outcomes for the pregnant women or their newborns.

Immunogenicity data from 13 studies and effectiveness data from 3 studies have shown:

- Pertussis antibody responses following vaccination with Adacel are robust in most pregnant women, are amplified when measured in newborn cord blood, persist for 2 to 4 months in the infant, but appear to blunt (reduce) the infant's antibody responses to her or his own pertussis vaccinations later in infancy. There is no evidence to suggest that this blunting is clinically relevant in protection against pertussis.
- Adacel and Adacel Polio are > 90% effective when given to women during pregnancy in preventing pertussis disease and hospitalisation in their infants younger than 3 months of age as detailed in the following table.

Table 1 - Vaccine effectiveness (VE) against pertussis disease in young infants born to mothers vaccinated during pregnancy with Adacel or Adacel Polio in 3 retrospective studies

Location	Vaccine	VE (95% CI)	VE estimation method	Infant follow-up period
UK	Adacel Polio	93% (81, 97)	Unmatched case-control	3 months
US	Adacel*	91.4% (19.5, 99.1)	Cohort regression model	2 months
UK	Adacel Polio	93% (89, 95)	Screening (case-coverage)	3 months

* over 80% of the vaccine used in this study population was Adacel

The decision to administer Adacel to a pregnant woman should be made according to the official national recommendations for pertussis vaccination of a pregnant woman.

Use in lactation

It is not known whether the active substances included in Adacel are excreted in human milk, but antibodies to the vaccine antigens have been found to be transferred to the suckling offspring of rabbits.

The effect on breast-fed infants of the administration of Adacel to their mothers has not been studied. As Adacel is inactivated, any risk to the mother or the infant is improbable. The risks and benefits of vaccination should be assessed before making the decision to immunise a nursing woman.

4.7 Effects on ability to drive and use machines

No studies on the effects on the ability to drive and use machines have been performed.

4.8 Undesirable effects

The reactions are listed within body systems and categorised by frequency according to the following definitions:

Very common	(≥ 1/10)			
Common	(<1/10	and	≥	1/100)
Uncommon	(<1/100	and	≥	1/1,000)

Clinical Trial Experience

In clinical studies with 324 adolescents and 638 adults given ADACEL, the most frequently reported adverse reactions occurring during the first 24 hours included the following:

Very common	Pain, swelling, redness at the injection site Headache, decreased energy, generalised body-ache
Common	Fever, chills, nausea, diarrhoea, sore or swollen joints
Uncommon	Vomiting

A causal relationship to vaccination was not established in all cases. All adverse reactions were generally mild and transient in duration. Fever was reported in less than 3% of vaccinees. There were no reports of fever over 39.9ºC. This adverse reaction profile was shown to be comparable to that seen in vaccinees who received a booster with Td adsorbed vaccine (tetanus (5 Lf and diphtheria (2 Lf toxoids adsorbed). Late-onset local adverse reactions (i.e. a local adverse reaction which had an onset or increase in severity 3 to 8 days post-immunisation) such as redness, swelling and pain, occurred in less than 2%.

The following table summarises Adverse Events (%) in Adacel (dTpa) recipients 0 - 24 hours post vaccination:

Table 2 - Frequency (%) of adverse events in adolescents and adults 0-24 hours after receiving Adacel

	Adolescents**			Adults	
Event	TC9704	Td9805		TC9704	
	dTpa N = 59	dTpa N = 135	dTpa +Hep B N = 134	dTpa*** N = 390	Td N = 151§
Local Reactions					
Redness	8.5	9.6	12.7	7.2	6.6
Swelling	18.6	15.6	20.1	11.3	13.9
Pain	94.9	69.6	75.4	84.6	86.1
Systemic Reactions					
Fever*	5.1	0.7	1.5	1.3	1.3
Headache	37.3	28.1	23.9	14.4	13.9
Chills	15.3	12.6	13.4	3.6	2.0
Body ache	15.3	18.5	19.4	11.8	8.6
Tiredness	23.7	37.0	31.3	11.5	14.6
Sore Joints	3.4	19.3	12.7	5.4	4.0
Nausea	6.8	12.6	12.7	6.9	5.3
Vomiting	1.7	0.0	1.5	0.5	0.0
Diarrhoea	1.7	4.4	3.0	2.3	1.3

* Includes fever ≥37.5°C and ≥ 39.1°C

** 12 - 18 years of age in TC9704 and 11-12 years of age in Td9805

*** >19 years of age

§ Includes (N=20) adolescents

Safety following repeat vaccination

The safety and tolerability of repeat vaccination with Adacel was evaluated in two open-label, non-randomised clinical studies. In study Td518, adolescent and adult subjects received Adacel approximately 5 years after a previous dose of Adacel. In study Td526, adult subjects received Adacel 10 years after a previous dose of Adacel or Adacel Polio.

The frequency of solicited injection-site and systemic reactions reported following repeat administration of Adacel at 5 and 10 years are presented in Table 3.

Table 3 - Frequency (%) of Solicited Reactions Observed in Adolescents and Adults Following Repeat Administration of Adacel at 5 and 10 years

Solicited Reactions	Repeat Administration of Adacel	
	After 5 years*	After 10 years†
	Adolescents and Adults 16 – 69 years (N=544)	Adults 20 – 72 years (N=361)
Injection Site Reactions		
Pain	87.6	87.8
Erythema	28.6	23.1
Swelling	25.6	20.5
Systemic Reactions		
Myalgia	61.0	60.1
Headache	53.2	40.6
Malaise	38.2	29.4
Fever	6.5	4.2

N: Number of vaccinated subjects with a safety follow-up

* Adverse reactions observed within 0 to 14 days after vaccination

† Adverse reactions observed within 0 to 7 days after vaccination

Post-marketing Experience

The following additional adverse events have been spontaneously reported during the post-marketing use of Adacel worldwide. Because these events are reported voluntarily from a population of uncertain size, it is not always possible to reliably estimate their frequency or establish a causal relationship to vaccine exposure. Decisions to include these events in labelling were based on one or more of the following factors: 1) severity of the event, 2) frequency of reporting, or 3) strength of causal connection to Adacel.

Immune System Disorders:

Hypersensitivity (anaphylactic) reaction (angioedema, oedema, rash, hypotension).

Nervous System Disorders:

Paraesthesia, hypoesthesia, Guillain-Barré syndrome, brachial neuritis, facial palsy, convulsion, syncope, myelitis.

Cardiac Disorders:

Myocarditis

Skin and Subcutaneous Tissue Disorders:

Pruritus, urticaria

Musculoskeletal and Connective Tissue Disorders:

Myositis

General Disorders and Administration Site Conditions:

Large injection site reactions (> 50 mm) and extensive limb swelling from the injection site beyond one or both joints occur after administration of Adacel in adolescents and adults. These reactions usually start within 24 - 72 hours after vaccination, may be associated with erythema, warmth, tenderness or pain at the injection site and resolve spontaneously within 3 - 5 days.

Injection site bruising, injection site nodule, sterile abscess

Reporting suspected adverse reactions after registration of the medicinal product is important. It allows continued monitoring of the benefit-risk balance of the medicinal product. Healthcare professionals are asked to report any suspected adverse reactions at https://nzphvc.otago.ac.nz/reporting/

4.9 Overdose

For general advice on overdose management, contact the National Poisons Centre, 0800 POISON or 0800 764 766.

5 PHARMACOLOGICAL PROPERTIES

5.1 Pharmacodynamic properties

Pharmacotherapeutic group: Pertussis, purified antigen, combinations with toxoids, ATC code: J07AJ52

Clinical trials

A total of 962 individuals (324 adolescents and 638 adults), who had not been immunised against tetanus, diphtheria, or pertussis within the previous five years, received a single 0.5 mL dose of Adacel in three clinical trials (TC9704, Td9805 and TC9707).

In TC9704, 449 (55 adolescents 12 to 17 years of age and 394 adults 18 to 54 years of age) received three lots of Adacel (dTpa), while 300 (37 adolescents and 263 adults) were given a

single 0.5 mL dose with an adult formulation diphtheria-tetanus vaccine (Td) and a monovalent acellular Pertussis (aP) vaccine, given separately, one month apart. In Td9805, 269 adolescents 11 to 12 years of age were vaccinated: 135 received Adacel given alone followed by the first dose of a 3-dose primary series with Hepatitis B vaccine (HB), one month later, and 134 were given Adacel concurrently with the first dose of HB.

In TC9704, the safety and immunogenicity profile of Adacel was shown to be comparable to that observed with a single booster dose of Td and aP containing the same amount of tetanus and diphtheria toxoids and pertussis antigens, administered separately. In Td9805, the safety and immunogenicity of concomitant administration of Hepatitis B vaccine with Adacel (dTpa+HB) was comparable to that observed with Adacel alone. Antibody responses observed in adolescents and adults from Td9805 and TC9704 are presented in the tables below:

Table 4 - Tetanus and Diphtheria Antibody Responses Observed One Month Following a Single Dose of Adacel

	Td9805 11 to 12 years				TC9704 12 to 54 years			
Antitoxin	Vaccine	N	GMC	% ≥0.10 IU/mL*	Vaccine	N	GMC	% ≥0.10 IU/mL*
Tetanus	dTpa	118	28.6	100.0	dTpa	446	15.7	100.0
	dTpa+HB	129	26.1	100.0	Td	151	16.0	99.3
Diphtheria	dTpa	118	8.4	100.0	dTpa	446	0.8	85.0
	dTpa+HB	129	6.8	100.0	Td	151	1.2	89.4

* Tetanus and diphtheria antitoxin levels were measured in EU and IU/mL, respectively

Table 5 - Pertussis Antibody GMC (EU/mL) Observed One Month After a Dose of Adacel

	Td9805 11 to 12 years			TC9704 12 to 54 years		
Pertussis Antibody	Vaccine	N	GMC**	Vaccine	N	GMC
Anti-PT	dTpa	118	169	dTpa	445	144
	dTpa+HB	129	144	aP	149	191
Anti-FHA	dTpa	118	445	dTpa	446	328
	dTpa+HB	129	375	aP	149	349
Anti-PRN	dTpa	118	280	dTpa	446	279
	dTpa+HB	129	303	aP	149	191
Anti-FIM	dTpa	118	1033	dTpa	446	995

	Td9805 11 to 12 years			TC9704 12 to 54 years		
	dTpa+HB	129	1130	aP	149	1825

** All GMCs (Geometric Mean Concentrations) are in EU/mL

In Td9707, 244 adults (19 to 60 years of age) received ADACEL, while 126 received Td and aP, given separately, one month apart. The safety and immunogenicity profile of ADACEL was also shown to be comparable to that observed with a single booster dose of Td and aP in study Td9707.

The mechanism of protection from *B pertussis* disease is not well understood. In a pertussis efficacy trial conducted in Sweden between 1992 and 1995, primary immunisation with Sanofi Pasteur Limited's acellular pertussis infant DTPa f formulation conferred a protective efficacy of 85% against typical pertussis disease (WHO definition). Although Adacel contains only one quarter of the amount of pertussis toxoid present in this acellular pertussis infant DTPa formulation, the antibody responses to Adacel were superior to those observed in the pertussis efficacy trial.

Duration of immunity

Long-term follow-up of serum antibody levels in adolescents and adults who received a single dose of Adacel shows that protective levels for tetanus antitoxin (≥ 0.01 EU/mL) and diphtheria antitoxin (≥ 0.01 IU/mL) persist in 100% and 99.1% of participants, respectively 10 years post vaccination. While protective levels of pertussis antibodies have not yet been clearly defined, at 10 years post-vaccination pertussis antibody levels were observed to decline towards pre-vaccination levels.

In Study TC9704-LT, the long-term antibody profile suggested that protection against diphtheria, tetanus is maintained for at least 10 years following a booster Adacel administration in both adolescents and adults. The pertussis response to Adacel was also robust, and antibodies persisted at detectable levels higher than pre-immunization levels for 10 years.

In Study Td9805-LT, the long-term antibody profile suggested that seroprotection against diphtheria and tetanus is maintained for at least 10 years following a booster with Adacel administered either alone or concurrently with Hepatitis B Vaccine in adolescents. The pertussis response to Adacel was robust, and antibodies persisted at levels 2 to 5-fold higher than pre-vaccination. At 10 years post-vaccination, GMCs further declined, in particular for PT and FHA antigens for which antibody levels decreased almost to pre-vaccination levels.

Immunogenicity following repeat vaccination

In an open-label, non-randomised clinical trial (Td526), 743 adults were divided into two groups for the evaluation of immunogenicity and safety following repeat vaccination with Adacel. Group 1 comprised 324 persons who previously received Adacel or Adacel-Polio vaccine approximately 10 years earlier as part of study TD9707 or Td9805. Group 2 consisted of age- balanced subjects who had not received any tetanus, diphtheria or pertussis-containing vaccine in the past 10 years

One month after vaccination, seroprotective tetanus antitoxin levels ≥ 0.1 IU/mL were achieved by 100% and 99.7% of Adacel vaccinees in Groups 1 and 2 respectively. Seroprotective diphtheria antitoxin levels ≥ 0.1 IU/mL were attained by 98.5% and 96.1% in Groups 1 and 2, respectively. (See Table 6)

Table 6 - Tetanus and Diphtheria Antitoxin Seroprotection Rates in Adults in Study Td526

IU/mL			% (95% CI)	
			Group 1: dTpa Repeat Dose (N=324)	Group 2: dTpa Naïve (N= 379-381)
Anti-Tetanus	Pre-vaccination	≥ 0.1	97.5 (95.2, 98.9)	93.1 (90.1, 95.5)
		≥ 1.0	44.8 (39.3, 50.3)	49.1 (43.9, 54.2)
	Post-vaccination	≥ 0.1	100 (98.9, 100)	99.7 (98.5, 100)
		≥ 1.0	100 (98.9, 100)	97.6 (95.6, 98.9)
Anti-Diphtheria	Pre-vaccination	≥ 0.1	73.5 (68.3, 78.2)	65.9 (60.9, 70.6)
		≥ 1.0	24.7 (20.1, 29.8)	21.8 (17.7, 26.3)
	Post-vaccination	≥ 0.1	98.5 (96.4, 99.5)	96.1 (93.6, 97.8)
		≥ 1.0	87.3 (83.2, 90.8)	83.5 (79.3, 87.1)

N: total number of subjects with available data
Group 1 received a previous dose of Adacel or Adacel Polio approximately 10 years earlier as part of Sanofi Pasteur trial Td9707 or Td9805.
Group 2 had not received any tetanus, diphtheria or pertussis-containing vaccine in the past 10 years.

GMCs and booster response rates for the pertussis antigens PT, FHA, PRN and FIM pre and post repeat vaccination with Adacel in adults are presented in Table 7. Post-vaccination anti- pertussis antibody GMCs were substantially higher compared to baseline. Non-inferiority for Group 1 (dTpa Repeat Dose) compared to Group 2 (dTpa Naïve) was achieved for antibodies to PT, FHA and PRN, but not FIM. Although non-inferiority was not achieved for FIM, the lower limit of the 95% CI of the GMC ratio (0.66) was only marginally lower than non-inferiority criterion (the lower bound of the 2-sided 95% CI > 0.67). Anti-pertussis booster response rates were high (> 84%) in both Group 1 and Group 2.

Repeat vaccination with Adacel at 10 year intervals induces robust immune responses to tetanus, diphtheria and pertussis in adolescents and adults.

Table 7 - Anti-pertussis GMCs and Booster Response Rates in Adults in Study Td526

Group		Pre-Vaccination		Post-Vaccination		Booster response rates*	
		N	GMCs (95% CI)	N	GMCs (95% CI)	N	% (95% CI)
Anti-PT (EU/mL)	dTpa Repeat Dose	291	15.1 (12.9; 17.6)	318	116† (105; 129)	285	87.7 (83.3; 91.3)
	dTpa Naïve	353	9.42 (8.20; 10.8)	357	89.2 (80.2; 99.3)	330	84.2 (79.9; 88.0)
Anti-FHA (EU/mL)	dTpa Repeat Dose	324	34.8 (31.2; 38.7)	324	214† (199; 231)	324	88.0 (83.9; 91.3)
	dTpa Naïve	380	20.0 (17.7; 22.5)	380	249 (229; 272)	379	93.9 (91.0; 96.1)
Anti-PRN (EU/mL)	dTpa Repeat Dose	324	28.2 (24.4; 32.7)	324	266† (243; 292)	324	90.4 (86.7; 93.4)
	dTpa Naïve	381	8.54 (7.41; 9.85)	381	216 (188; 247)	381	92.7 (89.6; 95.1)
Anti-FIM (EU/mL)	dTpa Repeat Dose	324	124 (111; 139)	324	779 (720; 843)	324	84.3 (79.8; 88.0)
	dTpa Naïve	374	37.8 (32.7; 43.7)	378	1015 (894; 1154)	371	93.0 (89.9; 95.4)

* Booster response is defined as subjects whose post-vaccination antibody concentrations are ≥ 4 x LLOQ, if the pre- vaccination concentration was < LLOQ; ≥ 4 x the pre-vaccination antibody concentration, if the pre-vaccination concentration was ≥ LLOQ but < 4 x LLOQ; ≥ 2 x the pre-vaccination antibody concentration, if the pre-vaccination concentration was ≥ 4 x LLOQ

LLOQ: PT=4 EU/mL; FHA=3 EU/mL; PRN=4 EU/mL; FIM=4 EU/mL.

N: Number of subjects with available data

† Non-inferiority for GMCs was achieved (the lower bound of the two sided 95% CI is greater than 0.67)

5.2 Pharmacokinetic properties

Evaluation of pharmacokinetic properties is not required for vaccines.

5.3 Preclinical safety data

Genotoxicity

Adacel has not been tested for genotoxic potential.

Carcinogenicity

Adacel has not been tested for carcinogenic potential.

6 PHARMACEUTICAL PARTICULARS

6.1 List of excipients

Aluminium phosphate

Phenoxyethanol

Water for injections

Other ingredients per dose include ≤ 5 micrograms residual formaldehyde and < 50 ng residual glutaral.

6.2 Incompatibilities

The vaccine must not be mixed with other vaccines or medicinal products.

6.3 Shelf life

48 months

6.4 Special precautions for storage

Store at 2º to 8ºC. REFRIGERATE. DO NOT FREEZE. Do not use after expiry date.

6.5 Nature and contents of container

0.5 mL of suspension in vial – pack size 1 or 5 vials.

0.5 mL of suspension in pre-filled syringe – pack size 1 or 10 syringes-with or without separate needles.

Not all pack sizes may be marketed.

6.6 Special precautions for disposal

After use, any remaining vaccine and container must be disposed of safely according to locally agreed procedures.

7 MEDICINE SCHEDULE

Prescription Medicine

8 SPONSOR

Pharmacy Retailing (NZ) Ltd t/a Healthcare Logistics
PO Box 62027
Sylvia Park Auckland 1644
Freecall: 0800 283 684
Email: medinfo.australia@sanofi.com

9 DATE OF FIRST APPROVAL

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10 DATE OF REVISION OF THE TEXT

16 February 2023

Summary table of changes

Section Changed	Summary of new information
4.8	Addition of injection site nodule to Post-marketing Experience