

Supplement to: Klein K, Scholl JHG, Vermeer NS, Broekmans AW, Van Puijenbroek EP, De Bruin ML, Stolk P. Traceability of biologics in the Netherlands – an analysis of information-recording systems in clinical practice and spontaneous ADR reports. Drug Saf. 2015.

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Electronic supplementary material 2: The sample list of recombinant biologics categorised in 11 product classes

Product class	Brand name	INN	ATC code	Product type	Expression system
Somatropins	NutropinAq	somatropin	H01AC01	Recombinant protein	E. Coli
	Omnitrope ⁱⁱ	somatropin	H01AC01	Recombinant protein	E. Coli
	Somatropin Biopartners	somatropin	H01AC01	Recombinant protein	Saccharomyces cerevisiae
	Genotropin ⁱ	somatropin	H01AC01	Recombinant protein	E. Coli
	Humatrope ⁱ	somatropin	H01AC01	Recombinant protein	E. Coli
	Norditropin ⁱ	somatropin	H01AC01	Recombinant protein	E. Coli
	Zomacton ⁱ	somatropin	H01AC01	Recombinant protein	E. Coli
Epoetins	Abseamed ⁱⁱ	epoetin alfa	B03XA01	Recombinant protein	Chinese hamster ovary (CHO)
	Aranesp	darbepoetin alfa	B03XA02	Recombinant protein	Chinese hamster ovary (CHO)
	Binocrit ⁱⁱ	epoetin alfa	B03XA01	Recombinant protein	Chinese hamster ovary (CHO)
	Biopoin	epoetin theta	B03XA01	Recombinant protein	Chinese hamster ovary (CHO)
	Epoetin Alfa Hexal ⁱⁱ	epoetin alfa	B03XA01	Recombinant protein	Chinese hamster ovary (CHO)
	Eporatio	epoetin theta	B03XA01	Recombinant protein	Chinese hamster ovary (CHO)
	Eporex ⁱ	epoetin alfa	B03XA01	Recombinant protein	Chinese hamster ovary (CHO)

	Mircera	methoxy polyethylene glycol-epoetin beta	B03XA03	Recombinant protein	Chinese hamster ovary (CHO)
	NeoRecormon	epoetin beta	B03XA01	Recombinant protein	Chinese hamster ovary (CHO)
	Retacrit ⁱⁱ	epoetin zeta	B03XA01	Recombinant protein	Chinese hamster ovary (CHO)
	Silapo ⁱⁱ	epoetin zeta	B03XA01	Recombinant protein	Chinese hamster ovary (CHO)
Filgrastims	Accofil ⁱⁱ	filgrastim	L03AA02	Recombinant protein	E. Coli
	Biograstim ⁱⁱ	filgrastim	L03AA02	Recombinant protein	E. Coli
	Filgrastim Hexal ⁱⁱ	filgrastim	L03AA02	Recombinant protein	E. Coli
	Grastofil ⁱⁱ	filgrastim	L03AA02	Recombinant protein	E. Coli
	Lonquex	lipegfilgrastim	L03AA14	Recombinant protein	E. Coli
	Neulasta	pegfilgrastim	L03AA13	Recombinant protein	E. Coli
	Neupogen ⁱ	filgrastim	L03AA02	Recombinant protein	E. Coli
	Nivestim ⁱⁱ	filgrastim	L03AA02	Recombinant protein	E. Coli
	Ratiograstim ⁱⁱ	filgrastim	L03AA02	Recombinant protein	E. Coli
	Tevagrastim ⁱⁱ	filgrastim	L03AA02	Recombinant protein	E. Coli
	Zarzio ⁱⁱ	filgrastim	L03AA02	Recombinant protein	E. Coli
Follitropins	Bemfola ⁱⁱ	follitropin alfa	G03GA05	Recombinant protein	Chinese hamster ovary (CHO)
	Elonva	corifollitropin alfa	G03GA09	Recombinant protein	Chinese hamster ovary (CHO)
	Fertavid	follitropin beta	G03GA06	Recombinant protein	Chinese hamster ovary (CHO)
	GONAL-f	follitropin alfa	G03GA05	Recombinant protein	Chinese hamster ovary (CHO)
	Ovaleap ⁱⁱ	follitropin alfa	G03GA05	Recombinant protein	Chinese hamster ovary (CHO)
	Pergoveris	follitropin alfa /lutropin alfa	G03GA05	Recombinant protein	Chinese hamster ovary (CHO)
	Puregon	follitropin beta	G03GA06	Recombinant protein	Chinese hamster ovary (CHO)
Monoclonal	Adcetris	brentuximab vedotin	L01XC12	Recombinant monoclonal antibody	Chinese hamster ovary (CHO)

antibodies				drug conjugate	
Arzerra	ofatumumab	L01XC10		Recombinant monoclonal antibody	Murine cell line (NS0)
Avastin	bevacizumab	L01XC07		Recombinant monoclonal antibody	Chinese hamster ovary (CHO)
Benlysta	belimumab	L04AA26		Recombinant monoclonal antibody	Murine cell line (NS0)
Cimzia	certolizumab pegol	L04AB05		Recombinant monoclonal antibody fragment	E. Coli
Entyvio	vedolizumab	L04AA33		Recombinant monoclonal antibody	Chinese hamster ovary (CHO)
Erbix	cetuximab	L01XC06		Recombinant monoclonal antibody	Mammalian cell line (Sp2/0)
Gazyvaro	obinutuzumab	L01XC15		Recombinant monoclonal antibody	Chinese hamster ovary (CHO)
Herceptin	trastuzumab	L01XC03		Recombinant monoclonal antibody	Chinese hamster ovary (CHO)
Humira	adalimumab	L04AB04		Recombinant monoclonal antibody	Chinese hamster ovary (CHO)
Ilaris	canakinumab	L04AC08		Recombinant monoclonal antibody	Mammalian cell line (Sp2/0)
Inflixtra [®]	infliximab	L04AB02		Recombinant monoclonal antibody	Murine hybridoma cells
Kadcyla	trastuzumab emtansine	L01XC14		Recombinant monoclonal antibody drug conjugate	Chinese hamster ovary (CHO)
Lemtrada	alemtuzumab	L01XC04		Recombinant monoclonal antibody	Chinese hamster ovary (CHO)
Lucentis	ranibizumab	S01LA04		Recombinant monoclonal antibody fragment	E. Coli
MabThera	rituximab	L01XC02		Recombinant monoclonal antibody	Chinese hamster ovary (CHO)
Perjeta	pertuzumab	L01XC13		Recombinant monoclonal antibody	Chinese hamster ovary (CHO)
Prolia	denosumab	M05BX04		Recombinant monoclonal antibody	Chinese hamster ovary (CHO)
Remicade	infliximab	L04AB02		Recombinant monoclonal antibody	Murine hybridoma cells
Removab	catumaxomab	L01XC09		Recombinant monoclonal antibody	Rat-mouse hybrid-hybridoma cell line
Remsima [®]	infliximab	L04AB02		Recombinant monoclonal antibody	Murine hybridoma cells

	RoActemra	tocilizumab	L04AC07	Recombinant monoclonal antibody	Chinese hamster ovary (CHO)
	Scintimun	besilesomab	V09HA03	Recombinant monoclonal antibody	Murine myeloma cell line
	Simponi	golimumab	L04AB06	Recombinant monoclonal antibody	Mammalian cell line (Sp2/0)
	Simulect	basiliximab	L04AC02	Recombinant monoclonal antibody	Mouse myeloma cell line
	Soliris	eculizumab	L04AA25	Recombinant monoclonal antibody	Murine cell line (NS0)
	Stelara	ustekinumab	L04AC05	Recombinant monoclonal antibody	Mammalian cell line (Sp2/0)
	Sylvant	siltuximab	L04AC11	Recombinant monoclonal antibody	Chinese hamster ovary (CHO)
	Synagis	palivizumab	J06BB16	Recombinant monoclonal antibody	Murine cell line (NS0)
	Tysabri	natalizumab	L04AA23	Recombinant monoclonal antibody	Murine cell line (NS0)
	Vectibix	panitumumab	L01XC08	Recombinant monoclonal antibody	Chinese hamster ovary (CHO)
	Xgeva	denosumab	M05BX04	Recombinant monoclonal antibody	Chinese hamster ovary (CHO)
	Xolair	omalizumab	R03DX05	Recombinant monoclonal antibody	Chinese hamster ovary (CHO)
	Yervoy	ipilimumab	L01XC11	Recombinant monoclonal antibody	Chinese hamster ovary (CHO)
	Zevalin	ibritumomab tiuxetan	V10XX02	Recombinant monoclonal antibody	Chinese hamster ovary (CHO)
Insulins	Abasaglar/Abasria ^{II}	insulin glargine	A10AE04	Recombinant protein	E. Coli
	Actraphane	insulin human	A10AD01	Recombinant protein	Saccharomyces cerevisiae
	Actrapid	human insulin	A10AB01	Recombinant protein	Saccharomyces cerevisiae
	Apidra	insulin glulisine	A10AB06	Recombinant protein	E. Coli
	Humalog	insulin lispro	A10AB/AC/AD04	Recombinant protein	E. Coli
	Humulin ^I	insulin human	A10AB/AC01	Recombinant protein	E. Coli
	Insulatard	insulin human	A10AC01	Recombinant protein	Saccharomyces cerevisiae
	Insulin Human Winthrop	insulin human	A10AB/CD01	Recombinant protein	E. Coli
	Insuman	insulin human	A10AB/CD01	Recombinant protein	E. Coli
	Lantus	insulin glargine	A10AE04	Recombinant protein	E. Coli

	Levemir	insulin detemir	A10AE05	Recombinant protein	Saccharomyces cerevisiae
	Liprolog	insulin lispro	A10AC04	Recombinant protein	E. Coli
	Mixtard	insulin human	A10AD01	Recombinant protein	Saccharomyces cerevisiae
	NovoMix	insulin aspart	A10AD05	Recombinant protein	Saccharomyces cerevisiae
	NovoRapid	insulin aspart	A10AB05	Recombinant protein	Saccharomyces cerevisiae
	Optisulin	insulin glargine	A10AE04	Recombinant protein	E. Coli
	Protaphane	insulin human	A10AC01	Recombinant protein	Saccharomyces cerevisiae
	Ryzodeg	insulin degludec / insulin aspart	A10AD06	Recombinant protein	Saccharomyces cerevisiae
	Tresiba	insulin degludec	A10AE06	Recombinant protein	Saccharomyces cerevisiae
Interferons	Avonex	interferon beta-1a	L03AB07	Recombinant protein	Chinese hamster ovary (CHO)
	Betaferon	interferon beta-1b	L03AB08	Recombinant protein	E. Coli
	Extavia	interferon beta-1b	L03AB08	Recombinant protein	E. Coli
	IntronA	interferon alfa-2b	L03AB05	Recombinant protein	E. Coli
	Pegasys	peginterferon alfa-2a	L03AB11	Recombinant protein	E. Coli
	PegIntron	peginterferon alfa-2b	L03AB10	Recombinant protein	E. Coli
	Plegridy	peginterferon beta-1a	L03AB13	Recombinant protein	Chinese hamster ovary (CHO)
	Rebif	interferon beta-1a	L03AB07	Recombinant protein	Chinese hamster ovary (CHO)
	ViraferonPeg	peginterferon alfa-2b	L03AB10	Recombinant protein	E. Coli
Antihaemophilic factors	NovoSeven	eptacog alfa (activated)	B02BD08	Recombinant protein	Baby hamster kidney (BHK)
	Advate	octocog alfa	B02BD02	Recombinant protein	Chinese hamster ovary (CHO)
	Helixate NexGen	octocog alfa	B02BD02	Recombinant protein	Baby hamster kidney (BHK)
	Kogenate Bayer	octocog alfa	B02BD02	Recombinant protein	Baby hamster kidney (BHK)
	NovoEight	turoctocog alfa	B02BD02	Recombinant protein	Baby hamster kidney (BHK)
	ReFacto AF	moroctocog alfa	B02BD02	Recombinant protein	Chinese hamster ovary (CHO)

	BeneFIX	nonacog alfa	B02BD09	Recombinant protein	Chinese hamster ovary (CHO)
	NovoThirteen	catridecacog	B02BD11	Recombinant protein	Saccharomyces cerevisiae
Fusion proteins	Enbrel	etanercept	L04AB01	Recombinant fusion protein	Chinese hamster ovary (CHO)
	Eylea	aflibercept	S01LA05	Recombinant fusion protein	Chinese hamster ovary (CHO)
	Nulojix	belatacept	L04AA28	Recombinant fusion protein	Chinese hamster ovary (CHO)
	Orencia	abatacept	L04AA24	Recombinant fusion protein	Chinese hamster ovary (CHO)
	Zaltrap	aflibercept	L01XX44	Recombinant fusion protein	Chinese hamster ovary (CHO)
Enzymes	Aldurazyme	laronidase	A16AB05	Recombinant protein	Chinese hamster ovary (CHO)
	Cerezyme	imiglucerase	A16AB02	Recombinant protein	Chinese hamster ovary (CHO)
	Elaprase	idursulfase	A16AB09	Recombinant protein	Human cell line (HT-1080)
	Fabrazyme	agalsidase beta	A16AB04	Recombinant protein	Chinese hamster ovary (CHO)
	Fasturtec	rasburicase	V03AF07	Recombinant protein	Saccharomyces cerevisiae
	Krystexxa	pegloticase	M04AX02	Recombinant protein	E. Coli
	Metalyse	tenecteplase	B01AD11	Recombinant protein	Chinese hamster ovary (CHO)
	Myozyme	alglucosidase alfa	A16AB07	Recombinant protein	Chinese hamster ovary (CHO)
	Naglazyme	galsulfase	A16AB08	Recombinant protein	Chinese hamster ovary (CHO)
	Rapilysin	reteplase	B01AD07	Recombinant protein	E. Coli
	Replagal	agalsidase alfa	A16AB03	Recombinant protein	Human cell line (HT-1080)
	Vimizim	elosulfase alfa	A16AB12	Recombinant protein	Chinese hamster ovary (CHO)
	Vpriv	velaglucerase alfa	A16AB10	Recombinant, gene-activated protein	Human cell line (HT-1080)
Other	Revasc ⁱⁱⁱ	desirudin	B01AE01	Recombinant protein	Saccharomyces cerevisiae
	Beromun	tasonermin	L03AX11	Recombinant protein	E. Coli
	Increlex	mecasermin	H01AC03	Recombinant protein	E. Coli
	Forsteo	teriparatide	H05AA02	Recombinant peptide	E. Coli

	Jetrea	ocriplasmin	S01XA22	Recombinant protein	Pichia pastoris
	Kepivance	palifermin	V03AF08	Recombinant protein	E. Coli
	Thyrogen	thyrotropin alfa	H01AB01/V04CJ01	Recombinant protein	Chinese hamster ovary (CHO)
	Luveris	lutropin alfa	G03GA07	Recombinant protein	Chinese hamster ovary (CHO)
	Ovitrelle	choriogonadotropin alfa	G03GA08	Recombinant protein	Chinese hamster ovary (CHO)
	Osigraft	eptotermin alfa	M05BC02	Recombinant protein	Chinese hamster ovary (CHO)
	Opgenra	eptotermin alfa	M05BC02	Recombinant protein	Chinese hamster ovary (CHO)
	Inductos	dibotermin alfa	M05BC01	Recombinant protein	Chinese hamster ovary (CHO)
	Somavert	pegvisomant	H01AX01	Recombinant protein	E. Coli
	Preotact ⁱⁱⁱ	parathyroid hormone (rDNA)	H05AA03	Recombinant protein	E. Coli
	ATryn	antithrombin alfa	B01AB02	Recombinant protein	Transgenic goat
	Victoza	liraglutide	A10BX07	Recombinant protein	Saccharomyces cerevisiae
	Ruconest	conestat alfa	B06AC04	Recombinant protein	Transgenic rabbit
	Revestive	teduglutide	A16AX08	Recombinant peptide	E. Coli
	Kineret	anakinra	L04AC03	Recombinant protein	E. Coli
	Nplate	romiplostim	B02BX04	Recombinant fusion protein	E. Coli
	HyQvia	human normal immunoglobulin	J06BA	Recombinant protein	Chinese hamster ovary (CHO)

ⁱ Recombinant biologic that is approved prior to 1995

ⁱⁱ Biosimilar

ⁱⁱⁱ Marketing authorisation has been withdrawn during the conduct of this study