

## Electronic supplementary material

**ESM Table 2** Results of the final Cox regression model for malignant neoplasms (reference group: human insulin) based on data for 127,031 patients

Covariate	Regression coefficient estimate	Standard error	p value
Aspart	-0.0141	0.0999	0.89
Lispro	-0.0121	0.1013	0.91
Glargine	0.0421	0.0466	0.37
Female	0.2168	0.1995	0.28
Age (years)	0.0373	0.0023	<0.0001
Mean daily dose (IU)	0.0039	0.0014	0.005
Bavaria	-0.13	0.0693	0.06
Berlin	-0.0339	0.0585	0.56
Brandenburg	0.0136	0.0538	0.80
Bremen	-0.0027	0.1152	0.98
Hamburg	-0.1188	0.0959	0.22
Hesse	-0.0942	0.0516	0.07
Lower Saxony	-0.1754	0.0711	0.01
Mecklenburg-Western Pomerania	-0.0478	0.0593	0.42
Rhineland	-0.0011	0.0659	0.99
Saarland	0.0555	0.0797	0.49
Saxony-Anhalt	0.1155	0.0628	0.07
Schleswig-Holstein	-0.1157	0.0672	0.09
Oral glucose-lowering agents	-0.1451	0.0355	<0.0001
Gastrointestinal agents	0.1893	0.0294	<0.0001
ACE inhibitors	-0.1204	0.0300	<0.0001
Antiarrhythmic agents	0.2389	0.0926	0.01
Corticosteroids	0.1530	0.0423	0.0003
Agents for diseases of the parathyroid gland	0.3055	0.0945	0.001
Cytostatic agents (prescribed for non-malignant diseases)	0.8641	0.0731	<0.0001
Interaction terms			
Female×age	-0.0096	0.0027	0.0004
Female×dose	0.0011	0.0003	0.002
Age×dose	0.0001	0.00002	<0.0001
Aspart×dose	0.0010	0.0007	0.14
Lispro×dose	-0.0002	0.0013	0.88
Glargine×dose	0.0045	0.0005	<0.0001