Table 3 Factors that may Influence the Ability to Extrapolate Toxicity and Carcinogenicity Data from Rats to Humans (based upon Table by Monroe and Mordenti (17))

Parameter	Rat	Human	Comment
Body weight (kg)	0.35	70	Humans have hundreds more cellular (DNA) targets for carcinogenic attack
Surface area (m^2)	0.05	1.75	
Lifespan (hr)	2.5	70	Humans can be exposed much longer, but the aging and carcinogenesis processes are interrelated
Food consumption (dry) g/kg BW/day	50	10	High intake of lipid and protein leads to cumulative oxidative damage that contributes to aging and cancer
Basal metabolism (kcal/kg/day)	109	26	High metabolic rate correlates with DNA oxidative damage
Anatomical			
Forestomach, Zymbal's gland, Harderian gland, preputial gland, clitoral gland	Present	Absent or rudimentary	Difficult to interpret tumors in organs present in one species but not the other
Bronchial glands	Absent	Present	
Emetic reflex	Absent	Present	May retain some toxicant that humans would not
Liver weight (% body weight)	5%	2.20%	Rates of organ growth and cell turnover may contribute to carcinogenic susceptibility
Physiological			
Reproductive cycle	Estrus	Menstrual	Different patterns and roles for estrogen and progesterone may affect susceptibility to certain cancers.
Parity	High	Low	Pregnancy protects against some cancers