MULTIDRUG RESISTANCE GENE (MDR1 Gene)

There are breeds and mixes of susceptible breeds of dogs http://www.vetmed.wsu.edu/depts-vcpl/breeds.aspx that have a genetic predisposition to adverse drug reactions involving over a dozen different drugs.

The most serious adverse drug reactions involve several antiparasitic agents (ivermectin, milbemycin, and related drugs), antidiarrheal agent loperamide (Immodium), and several anticancer drugs (vincristine, doxyrubicin, etc) http://www.vetmed.wsu.edu/depts-VCPL/drugs.aspx .

These drug sensitivities result from a mutation in the multidrug resistance gene (MDR1 gene). Washington State University's Veterinary Clinical Pharmacology Laboratory, who maintains the patent for this test, has indicated that Tollers are not listed as a breed affected by the mutation because they have not encountered a positive to date. http://www.vetmed.wsu.edu/depts-VCPL/printable/VCPL-Flier.pdf

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