Target Name	Thymidylate synthase
Target TTD ID	TTDS00301

Target Species	Human
Chemical Type	5-substitution in the pyrimidine ring
Mode of Action	Inhibitor
QSAR Model 1	$\log[1/K_i^{app}] = 4.04(\pm 0.52)\sigma_p^o - 2.28(\pm 0.37)M_R + 1.10(\pm 0.32)$ $n = 11,\quad r = 0.992,\quad r^2 = 0.983,\quad s = 0.216,\quad P < 0.0001,\ q^2 = 0.971,\ \text{SPRESS} = 0.282.$
Molecular Descriptor	Access the following web-servers to compute molecular descriptors: **MoDel** and **e-dragon** 3 descriptors in recognizing primary substituent effects. Electronic (represented by the resonance and inductive terms, r^- and F in Wataya et al., and Rnew and Fnew in Jarmuła et al., respectively) and steric (represented by the molar refractivity MR in Wataya et al., and by the Taft's Es parameter in Jarmuła et al.)
Reference	The effect of 5-substitution in the pyrimidine ring of dUMP on the interaction with thymidylate synthase: Molecular modeling and QSAR. *Bioorganic & Medicinal Chemistry* 15 (2007) 2346–2358

Target Species	Mice
Chemical Type	Quinazolines
Mode of Action	Inhibitor
Activity	Inhibition of thymidylate synthetase from mice L1210S leukemic cells

Type	
QSAR Model 1	$\log (1/I_{50}) = 5.77 + 0.40(I\text{-}4) - 1.72(I\text{-}5)$ $n = 33; r = 0.788; s = 0.72; F_{2,30} = 24.6$
QSAR Model 2	$\log (1/I_{50}) = 5.98 + 0.75(I\text{-}4) - 2.01(I\text{-}5)$ $n = 29; r = 0.905; s = 0.525; F_{2,26} = 58.96$
Molecular Descriptor	Access the following web-servers to compute molecular descriptors: **MoDel** and **e-dragon** Inhibition of Thymidylate Sunthetase in mice L1210S leukemic cells where *n* refers to the number of data points used in the regression, *r* is the multiple correlation coefficient, and *s* is the standard error of estimation. Hydrophobicity, π,, molar refractivity, MR, and Hammett constant, σ , for the substituents were taken from Leo et al.[14]a and Hansch et al. [15] or estimated following Hansch's approach.[14b] MR values were scaled by 0.1 to make them commensurable with the other parameters.
Reference	Multivariate Analysis and Quantitative Structure-Activity Relationships. Inhibition of Dihydrofolate Reductase and Thymidylate Synthetase by Quinazolines. Journal of Medicinal Chemistry, 1979, Vol. 22, No. 5. P483-491.

Target Species	Lactobacillus casei
Chemical Type	Quinazolines
Mode of Action	Inhibitor
Activity Type	Inhibition of thymidylate synthetase from Lactobacillus casei
QSAR Model 1	$\log (1/I_{50}) = 4.59 - 0.25(I\text{-}1) + 0.29(I\text{-}3) - 0.77(I\text{-}6) + 0.39(\pi\text{-}6)$ $n = 33; r = 0.71; s = 0.48; F_{4,28} = 7.21$
QSAR Model 2	$\log (1/I_{50}) = 4.638 - 0.395(I\text{-}1) + 0.391(I\text{-}3) - 0.809(I\text{-}6) + 0.426(\pi\text{-}6)$

	$n = 28; r = 0.911; s = 0.246; F_{4,23} = 28$
Molecular Descriptor	Access the following web-servers to compute molecular descriptors: **MoDel** and **e-dragon** Inhibition of Thymidylate Sunthetase in lactobacillus casei where *n* refers to the number of data points used in the regression, *r* is the multiple correlation coefficient, and *s* is the standard error of estimation. Hydrophobicity, π,, molar refractivity, MR, and Hammett constant, σ , for the substituents were taken from Leo et al.[14]a and Hansch et al. [15] or estimated following Hansch's approach.[14b] MR values were scaled by 0.1 to make them commensurable with the other parameters.
Reference	Multivariate Analysis and Quantitative Structure-Activity Relationships. Inhibition of Dihydrofolate Reductase and Thymidylate Synthetase by Quinazolines. Journal of Medicinal Chemistry, 1979, Vol. 22, No. 5. P483-491.

Target Species	Human
Chemical Type	C(5) analogues of dUMP
Mode of Action	Inhibitor
QSAR Model 1	$\log[1/K_i^{app}] = 4.04(\pm 0.52)\sigma_p^o - 2.28(\pm 0.37)M_R + 1.10(\pm 0.32)$ $n = 11,\quad r = 0.992,\quad r^2 = 0.983,\quad s = 0.216,\quad P < 0.0001,\quad q^2 = 0.971,$ SPRESS = 0.282.
Molecular Descriptor	Access the following web-servers to compute molecular descriptors: **MoDel** and **e-dragon** σ_p^o, resonance terms; M_R, molar refractivity; *n*, number of samples; *r*, correlation coefficient; r^2, square of correlation coefficient; *s*, standard deviation of regressions; *P*, significance of the variables in the models ; q^2, square of the correlation coefficient of the cross-validation; SPRESS, standard error of predictions. Electronic (represented by the resonance and inductive terms, σ^- and *F* in Wataya et al., and R_{new} and F_{new} in Jarmuła et al., respectively) and steric (represented by the molar refractivity M_R in Wataya et al., and by the Taft's E_S parameter in Jarmuła et al.)
Reference	The effect of 5-substitution in the pyrimidine ring of dUMP on the interaction with thymidylate

	synthase: Molecular modeling and QSAR. *Bioorganic & Medicinal Chemistry* 15 (2007) 2346–2358