## **Estimated model evidence**

Prior probability	model evidence	model evidence per data point
Quartic repulsion	-2489	-5.68
Quartic repulsion $+$ FISH	-2363	-5.39
Lennard-Jones	-1950	-4.45
Lennard-Jones $+$ FISH	-1859	-4.24

Table S1: Model evidence based on contact likelihood.