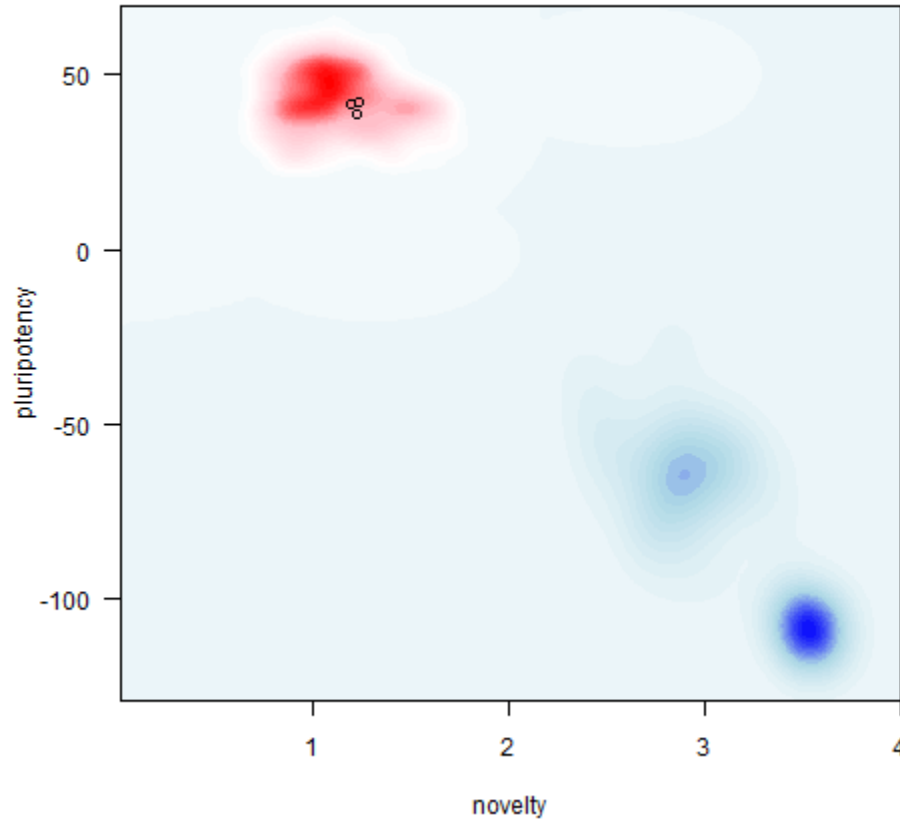


Model-Based Multi-Class Pluripotency Score



Combines the *Pluripotency Score* on the y-axis with the *Novelty Score* on the x-axis. The red and blue background hint to the empirical distribution of the pluripotent (red) and non-pluripotent samples (blue) in our own test data set.

Table with results

	pluri-raw	pluri logit-p	novelty	novelty logit-p	RMSD
MSN05-1A	41.61 +/- .043	1.00	1.20	0.00	0.38
MSN05-1B	38.76 +/- .043	1.00	1.23	0.00	0.42
MSN05-1C	41.97 +/- .043	1.00	1.23	0.00	0.40

Combines the *Pluripotency Score* on the y-axis with the *Novelty Score* on the x-axis. The red and blue background hint to the empirical distribution of the pluripotent (red) and non-pluripotent samples (blue) in our own test data set. Plus minus calculated from standard deviation divided by mean.

Pluripotency Score: A score that is based on all samples (pluripotent cells, somatic cells and tissues) in the stem cell model matrix. Samples with positive values are more similar to the pluripotent samples in the model matrix than to all other classes of samples in the matrix. The area between the red lines indicates the range that contains approximately 95 percent of the pluripotent samples tested. The *Pluripotency Score* gives an indication if a sample contains a pluripotent signature, but not necessarily if the cell preparation is a normal, bona-fide hESC or iPSC. Partially differentiated pluripotent cells, teratocarcinoma cells or karyotypically abnormal embryonic stem cells may also have a high *Pluripotency Score*. The blue lines indicate those scores that we have observed in approximately 95 percent of the non-pluripotent samples.

Novelty Score: A score that is based on well-characterized pluripotent samples in the stem cell model matrix. Samples are color-coded green (pluripotent), orange, red (not-pluripotent) based on the probabilities given from the logistic regression model. Orange and red samples are more dissimilar to the pluripotent samples in the model matrix than the other pluripotent samples in the matrix. A low Novelty Score indicates that the test sample can be well reconstructed based on existing data from other well-characterized iPSC and ESC lines. A high Novelty Score indicates that there are patterns in the tested sample that cannot be explained by the currently existing data from well-characterized, karyotypic normal pluripotent stem cells. Partially differentiated pluripotent cells, teratocarcinoma cells or karyotypically abnormal embryonic stem cells may have a high pluripotency score but cannot be reconstructed well with data from well-characterized, normal pluripotent stem cells and thus are expected have a high *Novelty Score*.