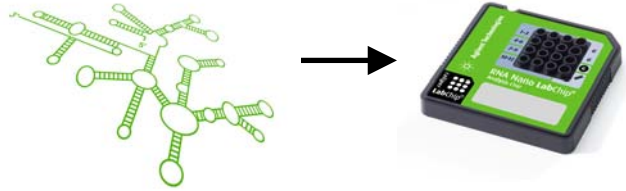


How the RNA Integrity Number (RIN) Works

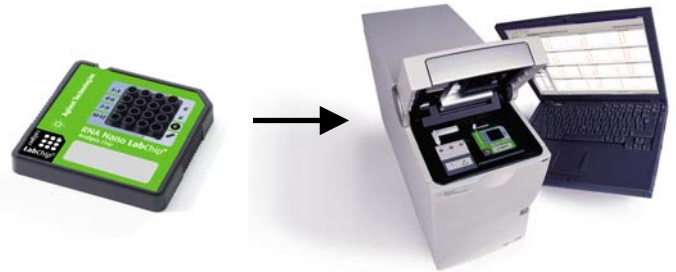
Step 1:

Researchers deposit their total RNA sample into an RNA Nano LabChip.



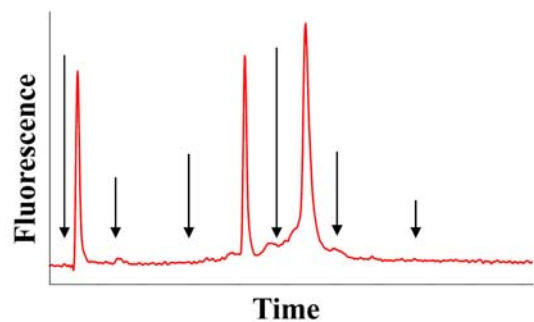
Step 2:

They insert the LabChip into the Agilent bioanalyzer and let the analysis run, generating a digital electropherogram.



Step 3:

The new RIN algorithm then analyzes the entire electrophoretic trace of the RNA sample, including the presence or absence of degradation products, to determine sample integrity. Important elements of the electropherogram that are indicative of RNA quality are shown in the figure at right.



Step 4:

The algorithm assigns a 1 to 10 RIN score, where level 10 RNA is completely intact. Because interpretation of the electropherogram is automatic and not subject to individual interpretation, universal and unbiased comparison of samples is enabled and repeatability of experiments is improved.

The RIN algorithm was developed using neural networks and adaptive learning in conjunction with a large database of eukaryote total RNA samples, which were obtained mainly from human, rat, and mouse tissues. The RIN score is largely independent of the amount of RNA used and the origin of the sample.

