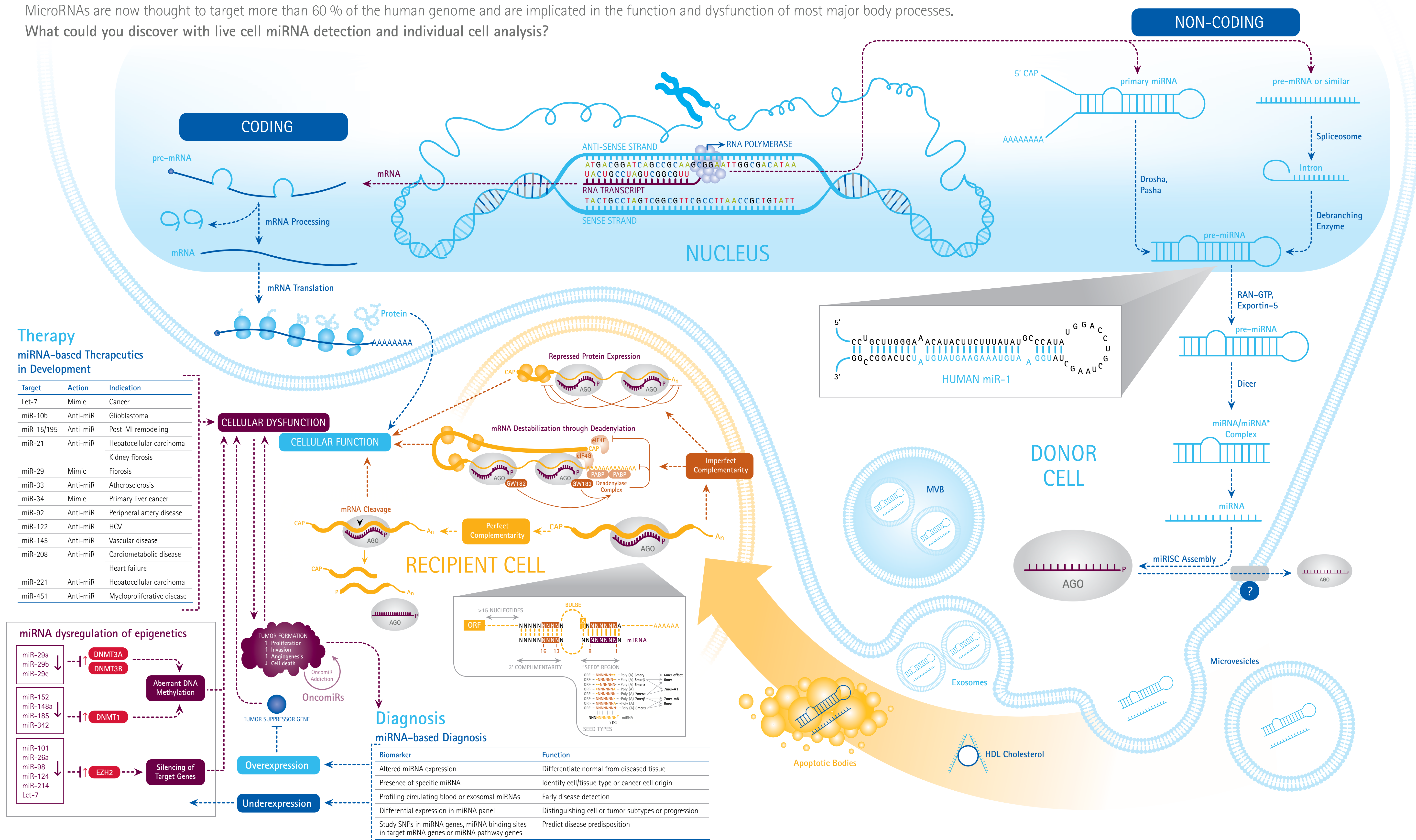


# MicroRNAs: Form and function in health & disease

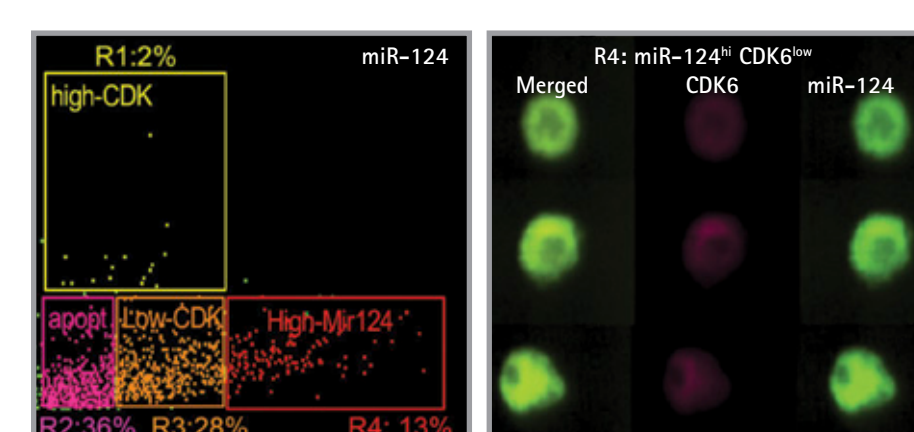
MicroRNAs are now thought to target more than 60 % of the human genome and are implicated in the function and dysfunction of most major body processes.

What could you discover with live cell miRNA detection and individual cell analysis?

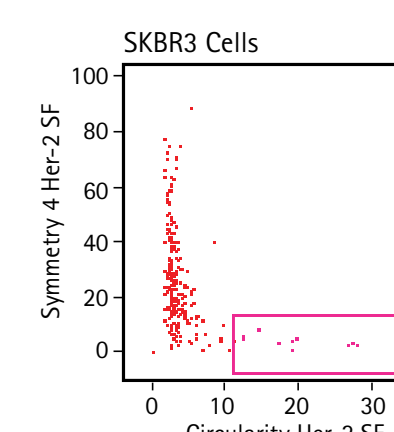


## Microscopy + Flow Cytometry

Amnis® imaging flow cytometers provide in-depth analysis and detailed imagery of every individual cell and hard to reach subpopulations.



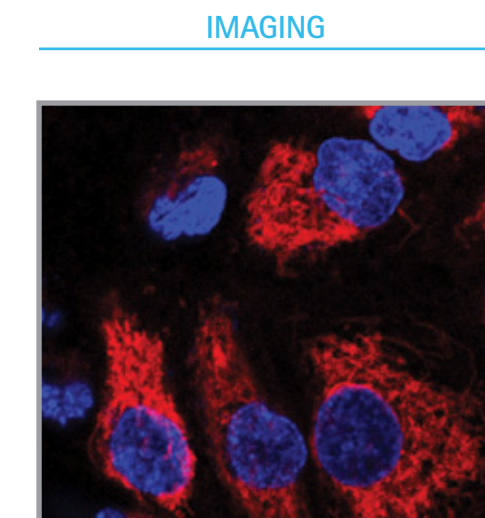
Analysis of the expression of miR-124 and CDK6 in neuroblastoma cells transfected with control miRNA (a) and miR-124. Ponomarev et al. Visualization and quantitation of the expression of microRNAs and their target genes in neuroblastoma single cells using imaging cytometry. BMC Research Notes 2011 4:517.



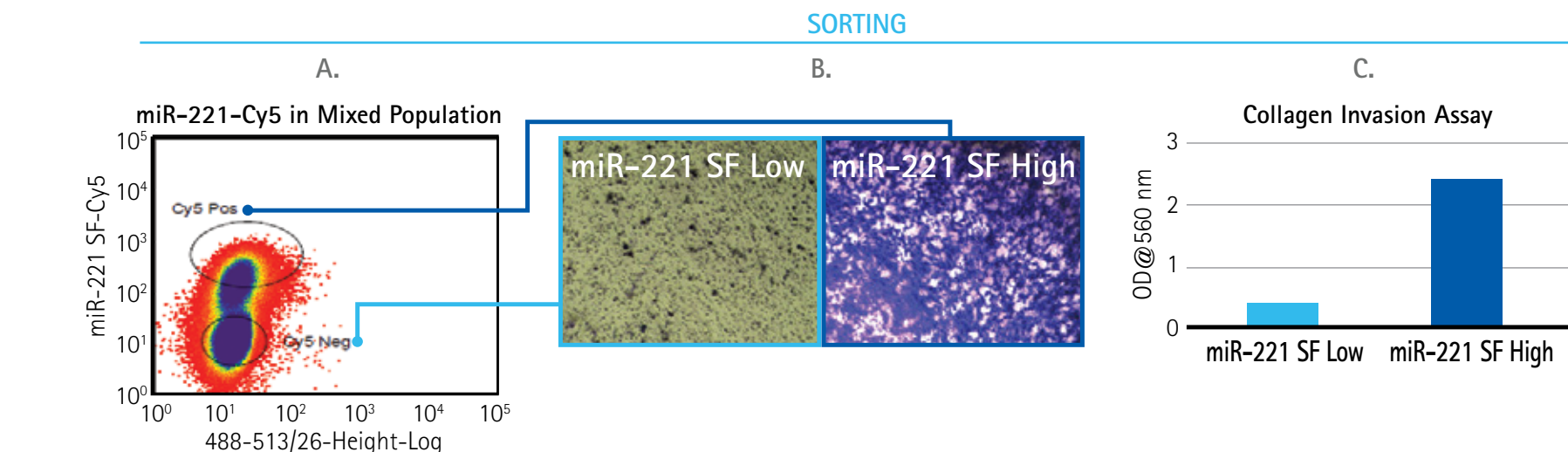
Amnis ImageStream® Mark II imaging flow cytometer detection of SKBR-3 human breast cancer cells labeled with SmartFlare™ probes targeting EPCAM and Her-2 mRNAs.

## Live cell imaging and sorting using microRNAs with SmartFlare™ RNA Detection Probes

Live cell messenger and microRNA detection is now possible, in a single incubation step using inert nanoparticle technology to specifically detect native RNA.



Live cell imaging of miR-21 RNA in human prostate cancer cells (DU145) using SmartFlare™ RNA Detection Probes.



Cyanine 5 positive cells ["miR-221-high"] and Cy5 negative cells ["miR-221-low"] were sorted (A) and analyzed using a transwell collagen invasion assay. Cells that invaded through to the underside of the transwell membrane were stained and either visualized (B) or the stain was extracted and absorbance measured (C).

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