KromaTiD
Direct, Definitive Genomics

Authors
Matthew McGowan[1], Douglas Brugge[2], Susan Bailey[3],
Erin Cross[1], Stephen Kunkel[4], Christopher Tompkins[1]
[1]KromaTiD, Longmont, CO,
[2]University of Conneticut, Farmington, CT
[3]Colorado State University, Fort Collins, CO
[4]University of Texas Medical Branch, Galveston, TX

What is dGH?

directional Genomic Hybridization

Beyond Metaphase FISH!

Metaphase FISH — Inversion cannot be visualized in standard metaphase FISH spread

dGH — Inversion visualized as a result of unidirectional dGH probe binding

Trawling The Genomic Deeps
AI-Empowered High-Throughput dGH SCREEN™

Imaging
Thousands of single cell metaphase spreads are imaged using 5-color dGH SCREEN.

Multi-spread   Harlequin   Morphology

Qualification
Images are automatically checked for disqualifying features before downstream processing and analysis.

Segmentation
Qualified spreads are segmented into individual chromosome tiles and assessed for overlap with other objects.

Classification
Chromosome tiles are further classified by number and analyzed for the presence of structural variations.

What's The Catch?
Millions of Datapoints

Comparative Aneuploidy

Cell populations from samples with elevated rates of sporadic aneuploidy exhibit significantly different object count distributions compared to normal samples.

Translocation Profiling

Example recurrent structural variations identified in cell lines exposed to mutagenic souces.

(1'-5)(5'-1) *No Seq. Data*

(4'-11)(11'-4) *Seq. Confirmed*

(3'-6)(6'T) *No Seq. Data*

(4'-11)(11'-4) (3'-18)(11'-3)(18'T) *No Seq. Data*

Complex Characterization

Break   Inversion   Translocation