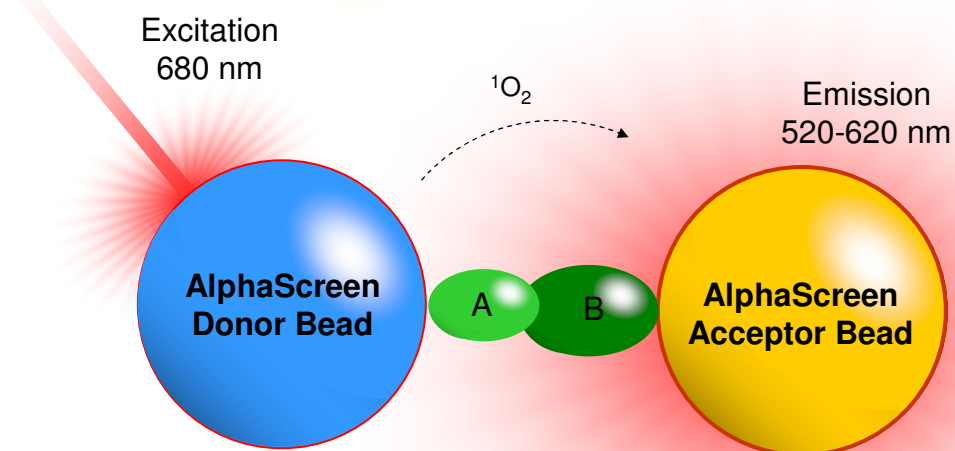




PerkinElmer[®]
precisely.

PerkinElmer Bio-Discovery
reagents: ***Tools for better
hits***

What is AlphaScreen?



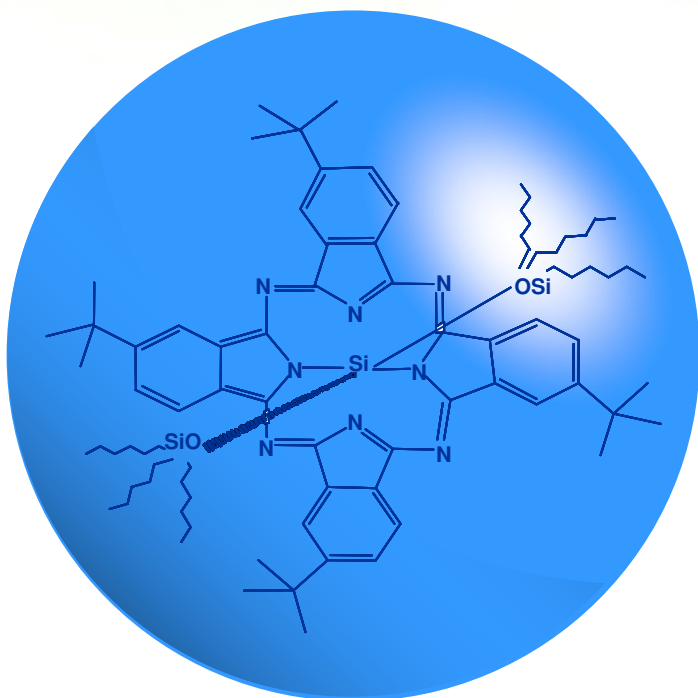
Features

- **Highly sensitive**
- **homogeneous technology**
- **Affordable reagents**
- **Focused on high volume HTS**
- Non-radioactive
- Sensitive (Time-resolved)
- Sensitive (Low background)
- Sensitive (Amplified signal)
- Broad range of affinities
- Proximity based
- Easy to use
- Automatable
- Miniaturizable
- Highly versatile
- Easy access

ALPHA SCREEN™

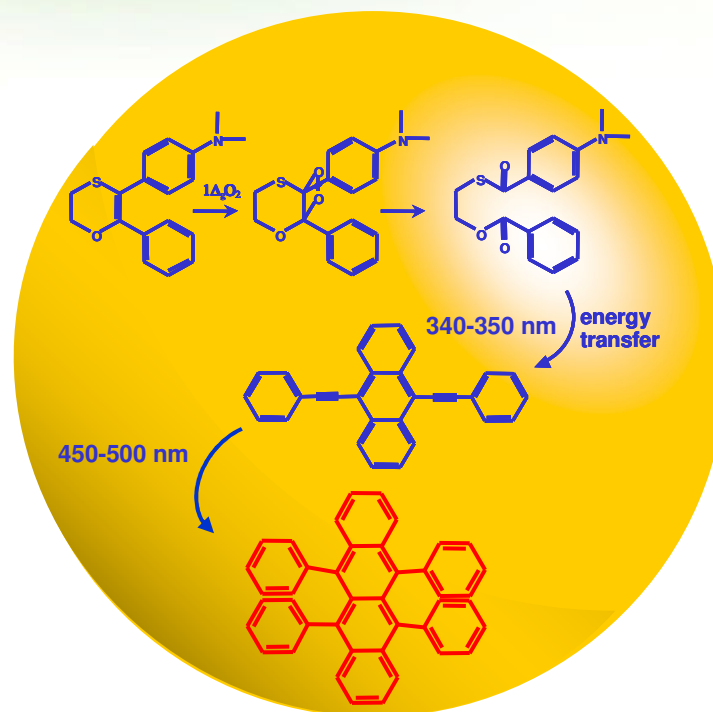
AlphaScreen beads

Donor beads



Donor:
Phthalocyanine

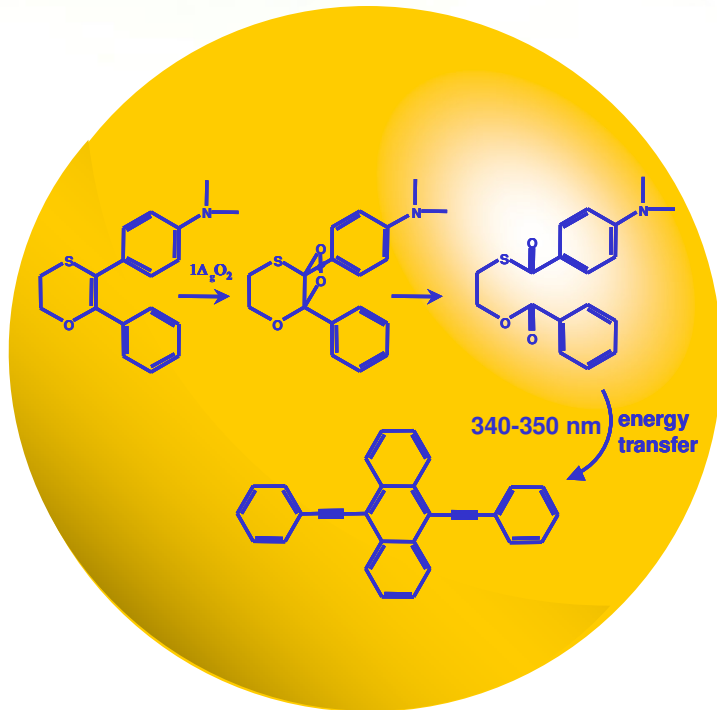
Acceptor beads



Rubrene emission : 540-680 nm
Detection: 520-620 nm

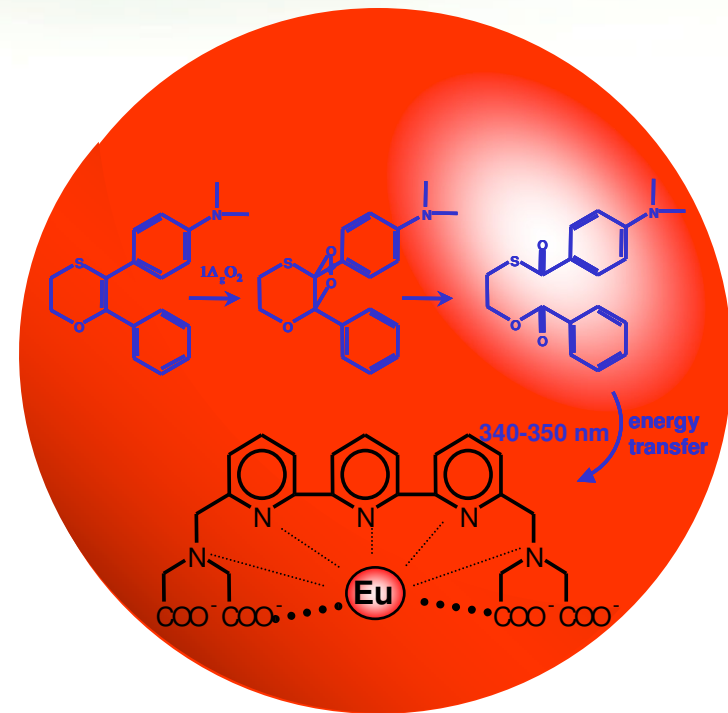
New AlphaLisa Acceptor beads

Regular TAR beads



Rubrene emission : 540-680 nm
Detection: 520-620 nm

AlphaLISA beads



Eu emission : 605-625 nm
Detection: 607-623 nm

AlphaScreen beads and signal

Beads

- 250 nm: very stable colloid suspension
- hydrogel: dextran polymer
 - prevent NS interaction (aggregation)
 - reactive aldehyde groups (raw beads)
- heat stable (95°C)

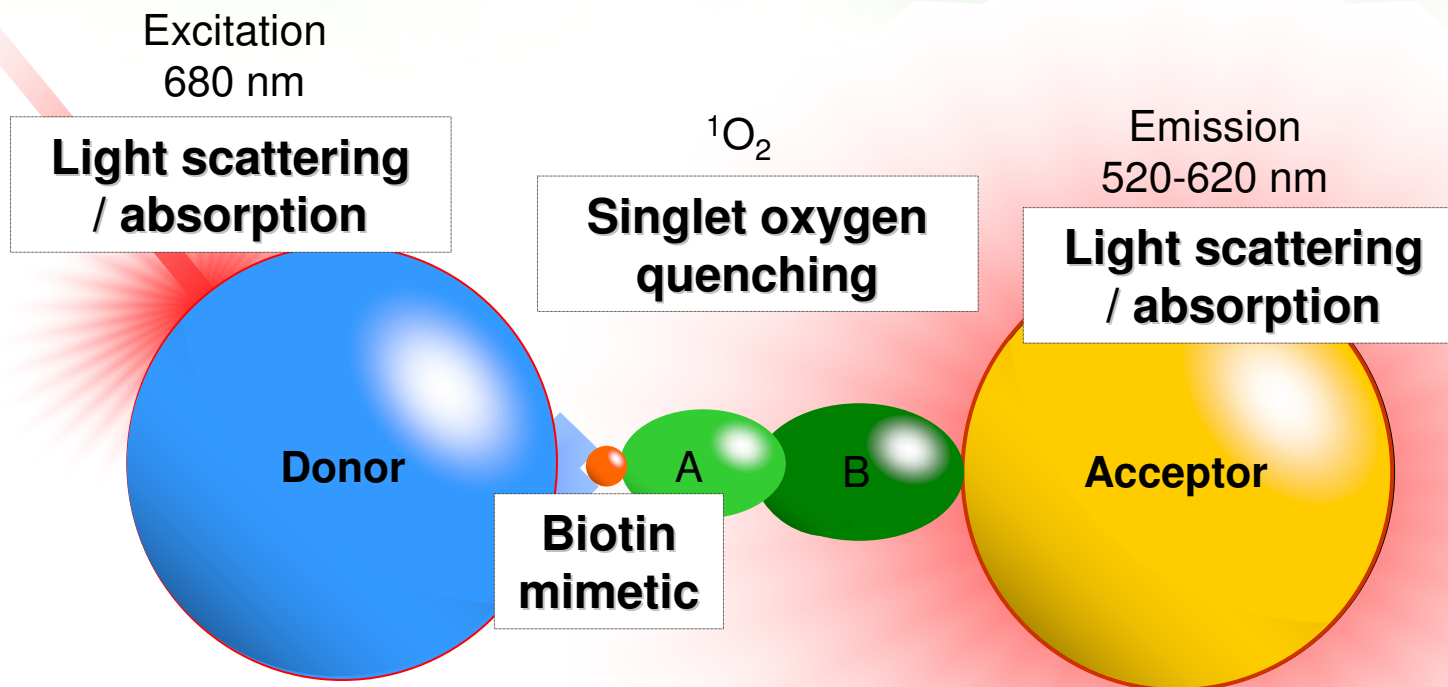
Signal

- λ_{ex} 680 nm: low compound interference
- λ_{em} 600 nm: low background
- time-resolved: low background

Validated classes of assays

- Ligand – Receptor interactions
 - Cytokines (TNF α , IL6)
 - Nuclear receptor (ER α)
 - functional GPCR (cAMP, Erk phosphorylation)
- Enzyme
 - Kinases (biochemical and cellular assays Surefire™)
 - Proteases
 - Helicase, DNA polymerase, DNase
- ELISA conversion - AlphaLISA
- Others
 - Low affinity protein-protein interactions(p53/HDM2)
 - Phage displayed peptides
 - Protein-DNA interactions

Optimization using TruHits and Omnibeads



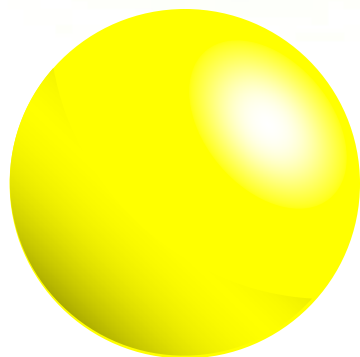
Compound Interference

- Singlet Oxygen Quencher*
 - Ascorbate, NaN₃
 - Transition metals: Fe^{2+/3+}, Cu²⁺, Ni²⁺, Zn²⁺, Al²⁺
 - Porphyrins, Thiophenes (δ-)R-C=C-R(δ-)
- Biotin mimetics**
- Inner filters**
 - 680 nm: absorbing laser emission
 - 520-620 nm: absorbing acceptor bead emission
- Light scatterers**
 - Poorly soluble compounds forming aggregates
 - Light diffraction = signal decrease

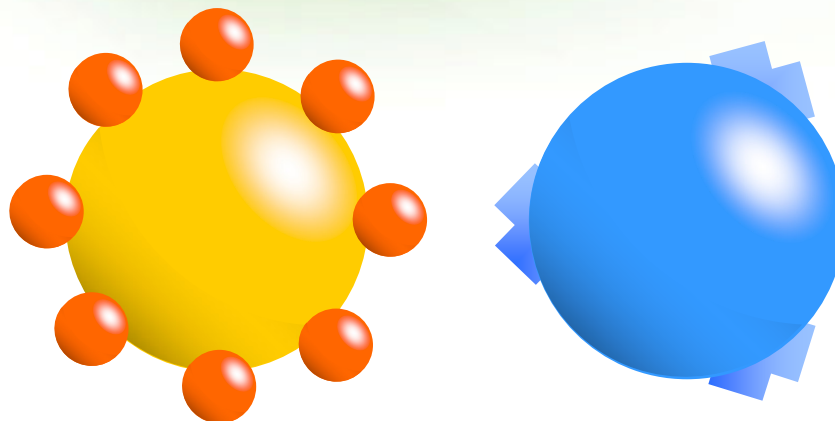
****specific to AlphaScreen***

*****common to most technologies***

Omnibeads and TruHits reagents



Omnibeads



TruHits Reagents

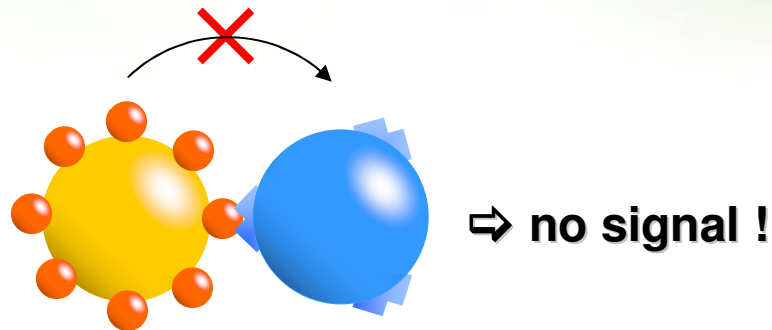
- Biotin Acceptor
- Streptavidin Donor

Enabling tools to:
optimize assays &
troubleshoot compound interference

Compound Interference:

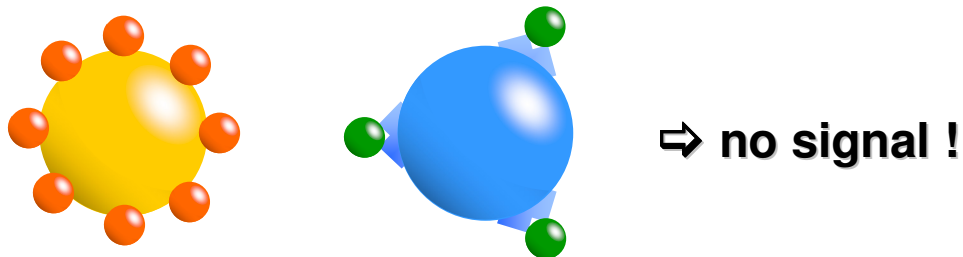
.....using TruHits and Omnibeads for troubleshooting

- Pre-bound biotin Acceptor / SA Donor: O₂ Quenchers

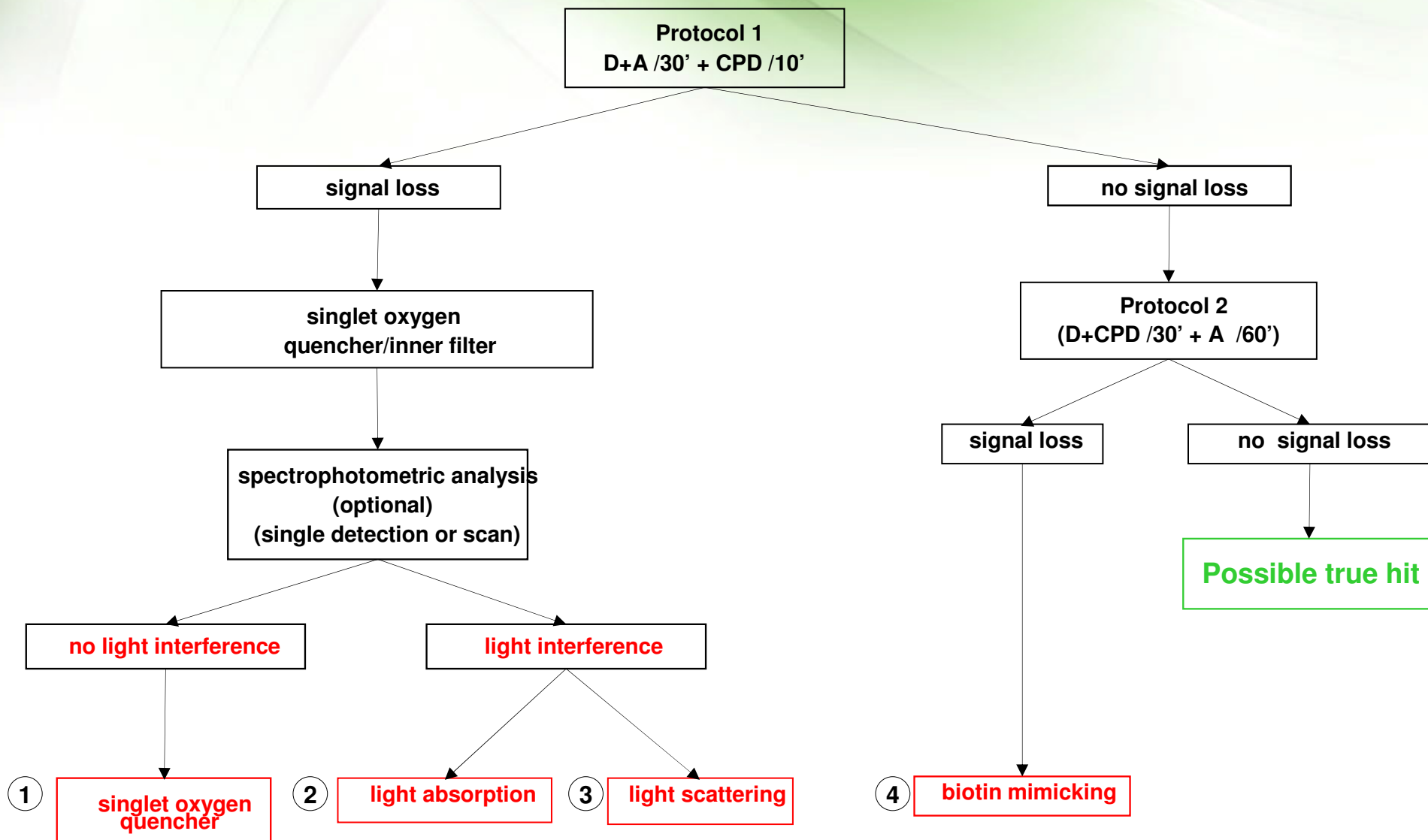


- Omnibeads: Inner filter

- biotin Acceptor / SA Donor: Biotin or SA analogs



Strategy to solve compound interference



Discovery.
Right this way.



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precisely.