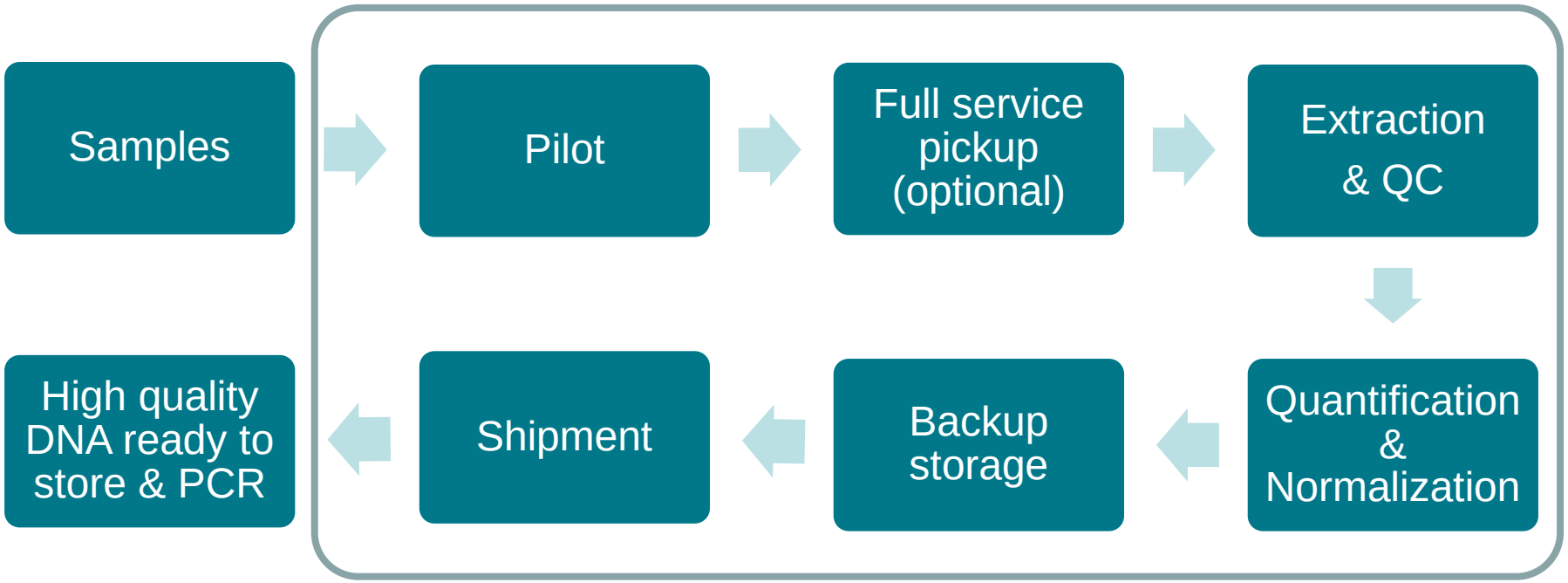
Solutions for advancing cohort studies

Cohort study project support services

Extraction module



Extraction → **SNP Discovery** → **SNP Genotyping**

Extraction service package

	Description	Remarks
Volume	Up to 10 mL	
Yield	Expected around 30 µg/ µL	Dependent on amount & quality of the received samples
Sample type	Blood, saliva, others	
Quantification	Full spectrophotometer graph (incl. OD 260/280) provided	Other quantification methods optional
Normalisation	Normalised fraction shipped to customer	Aliquot volume and concentration determined in collaboration
Backup	Aliquots stored at LGC Genomics (optional)	Fraction determined in collaboration
QC	3 SNP genotyping (KASP) QC incl. gender test	SNP data delivered to customer
Certification	Options for full ISO certified service	DIN EN ISO 9001:2008
Plate type	Matrix 2D barcode storage racks included	
Shipment	All-in shipment arrangements	

Extraction → **SNP Discovery** → **SNP Genotyping**

Pilot and pick-up

1. Pilot study (12 - 48 samples)
2. Full service pick-up of samples (bulk or batch)

Samples → Pilot → Full service pick-up → Extraction & QC → Quantification & Normalisation → Backup storage → Shipment → High quality DNA ready to store & use

DNA extraction

3. DNA extraction

- Extraction volumes: up to **10 mL** (higher volumes possible)
- Sample types: whole blood, buffy coats, serum, tissue, saliva or buccal swabs (other matrices possible)

DNA genotek

Certified partner

Samples → Pilot → Full service pickup → **Extraction & QC** → Quantification & Normalization → Backup storage → Shipment → High quality DNA ready to store & use

QC - Unique KASP SNP genotyping QC

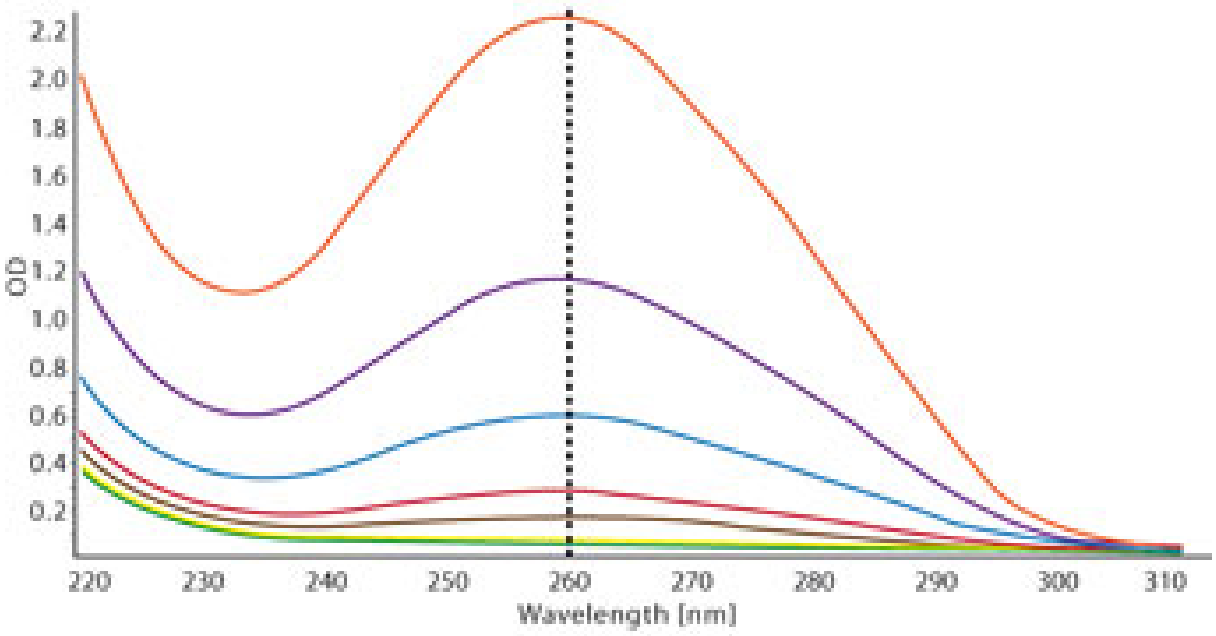
4. Genotyping QC

- 3 SNP Genotyping QC standard. Includes M/F assay for sample validation

- 24 SNP Genotyping panel
  (also applicable for validation of e.g. NGS samples)

Quantification

5. Quantification of DNA / RNA concentration (UV measurement) (other quantification methods optional)



Samples → Pilot → Full service pickup → Extraction & QC → **Quantification & Normalization** → Backup storage → Shipment → High quality DNA ready to store & use

Normalisation

6. Normalisation to desired concentration and volume (typically of a <1ml fraction of total sample)

Samples → Pilot → Full service pickup → Extraction & QC → **Quantification & Normalization** → Backup storage → Shipment → High quality DNA ready to store & use

Backup

7. Backup of aliquots (typically 10%) in walk-in-freezer storage facility UK

Samples → Pilot → Full service pickup → Extraction & QC → Quantification & Normalization → **Backup storage** → Shipment → High quality DNA ready to store & use

Packaging and shipment

8. Shipment in industry standard 2D barcoded storage racks (Matrix)

Enhance productivity..., do more with less

- Cost savings can be used to increase sample number
- Real customer example:

	In-house (core facility)	LGC Genomics
Sample number	973	4206

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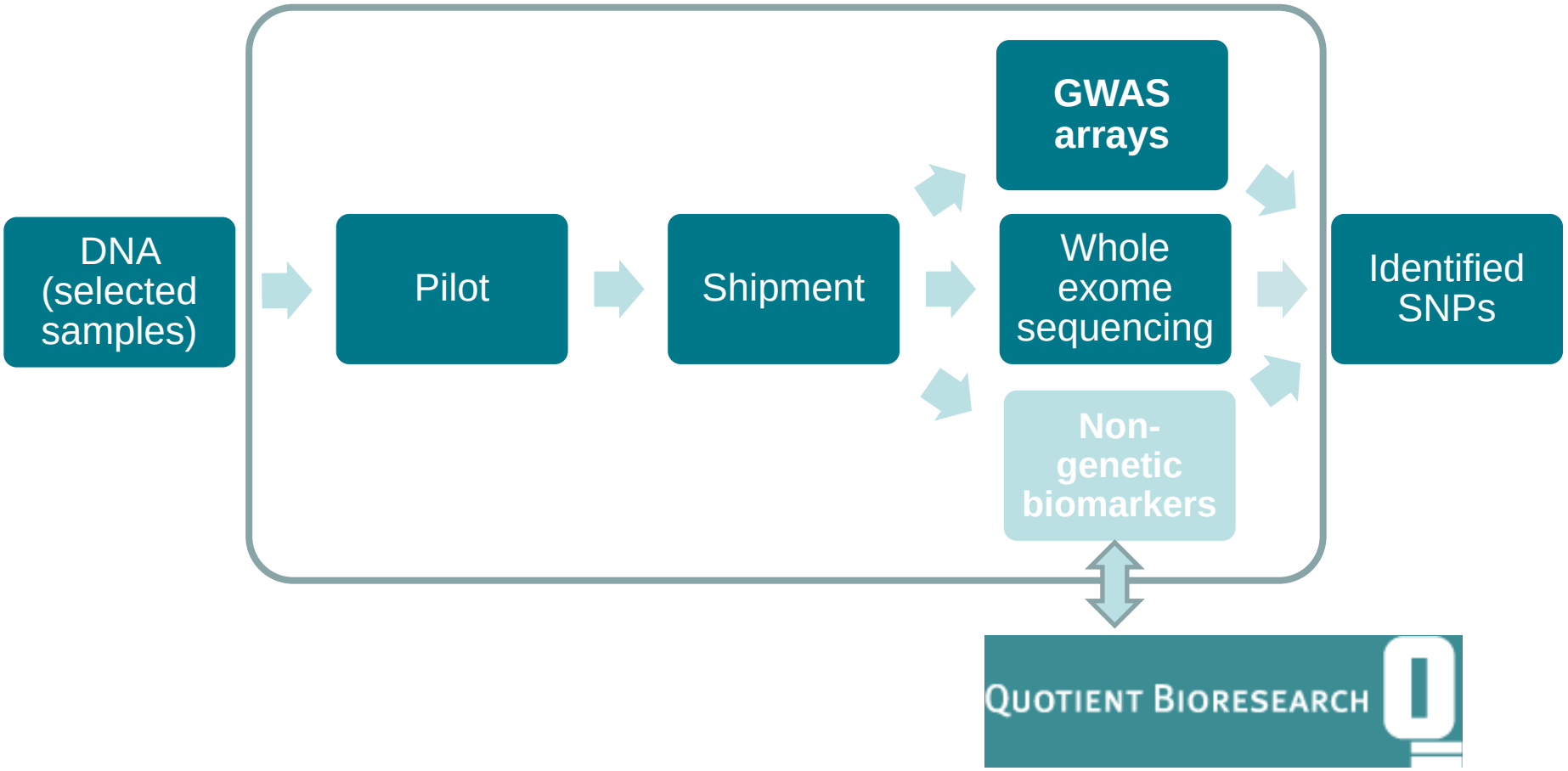
SNP discovery module

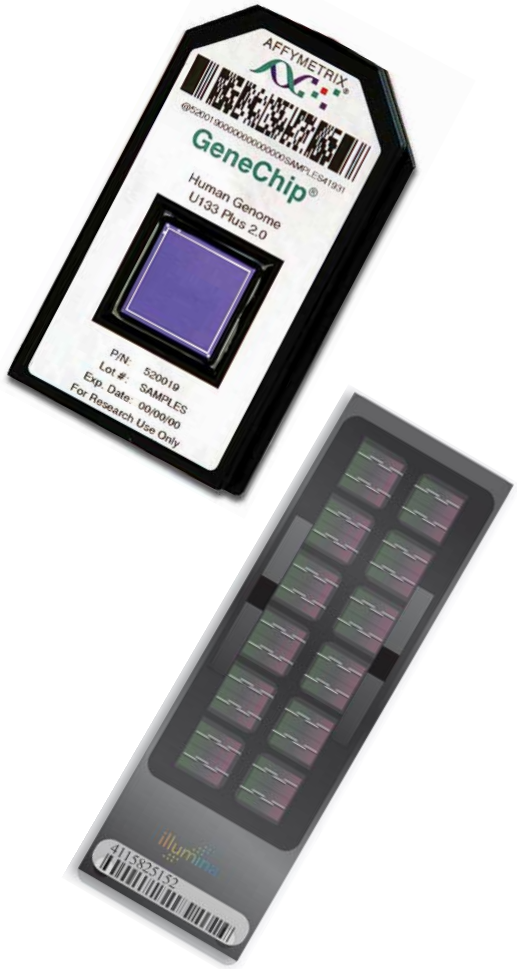


Extraction → **SNP Discovery** → **SNP Genotyping**

SNP Discovery – Array technology

Array based SNP discovery

- Affymetrix GeneChip® DNA analysis solutions
  - 10,000 to 1.8 million markers
  - starting material only 100-500 ng of DNA
- Illumina Infinium & Infinium HD bead arrays
  - 50,000 to 5 million SNP markers



Extraction → **SNP Discovery** → **SNP Genotyping**

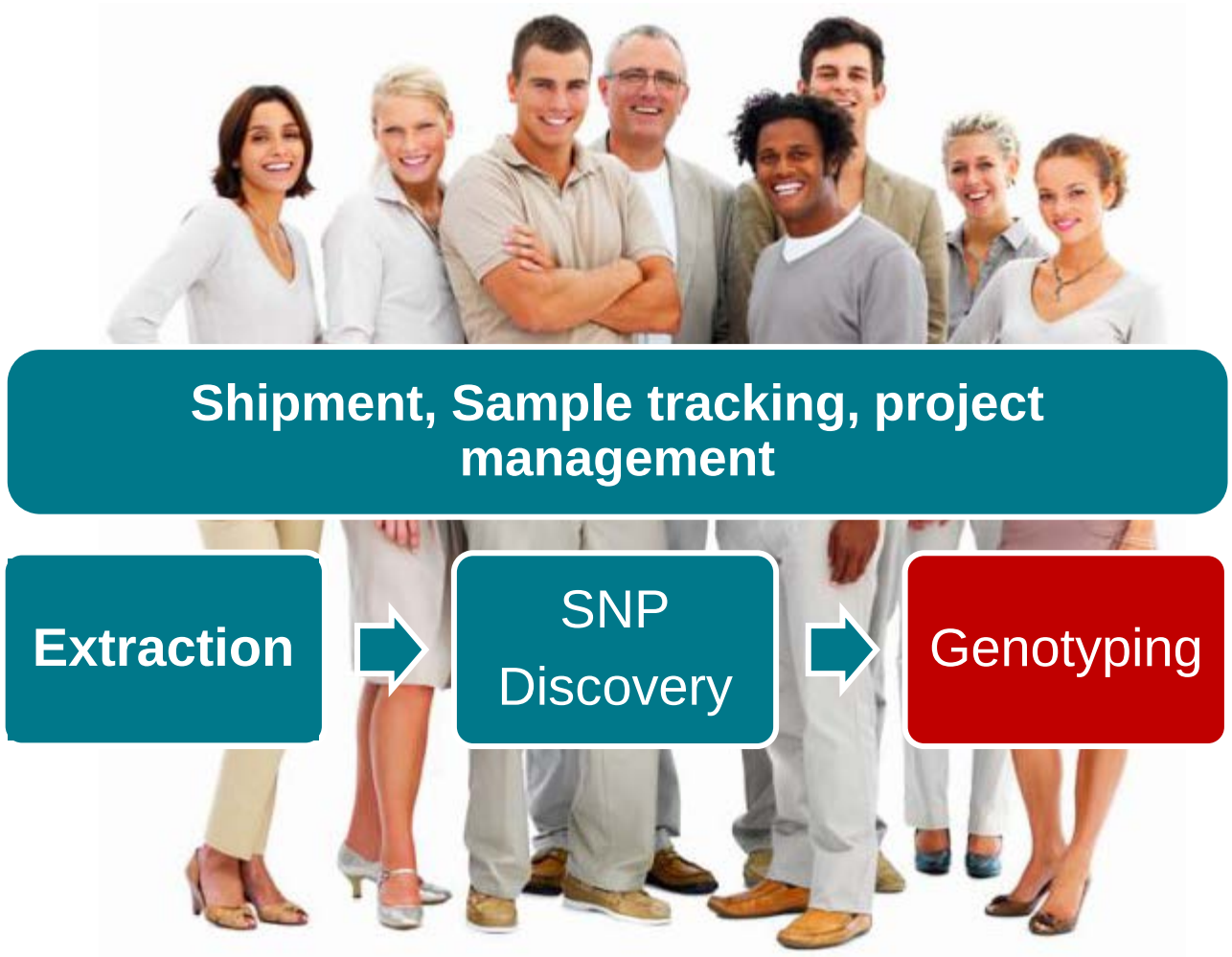
SNP discovery - NextGen sequencing

Roche GS FLX TITANIUM & Illumina HiSeq 2000 technology

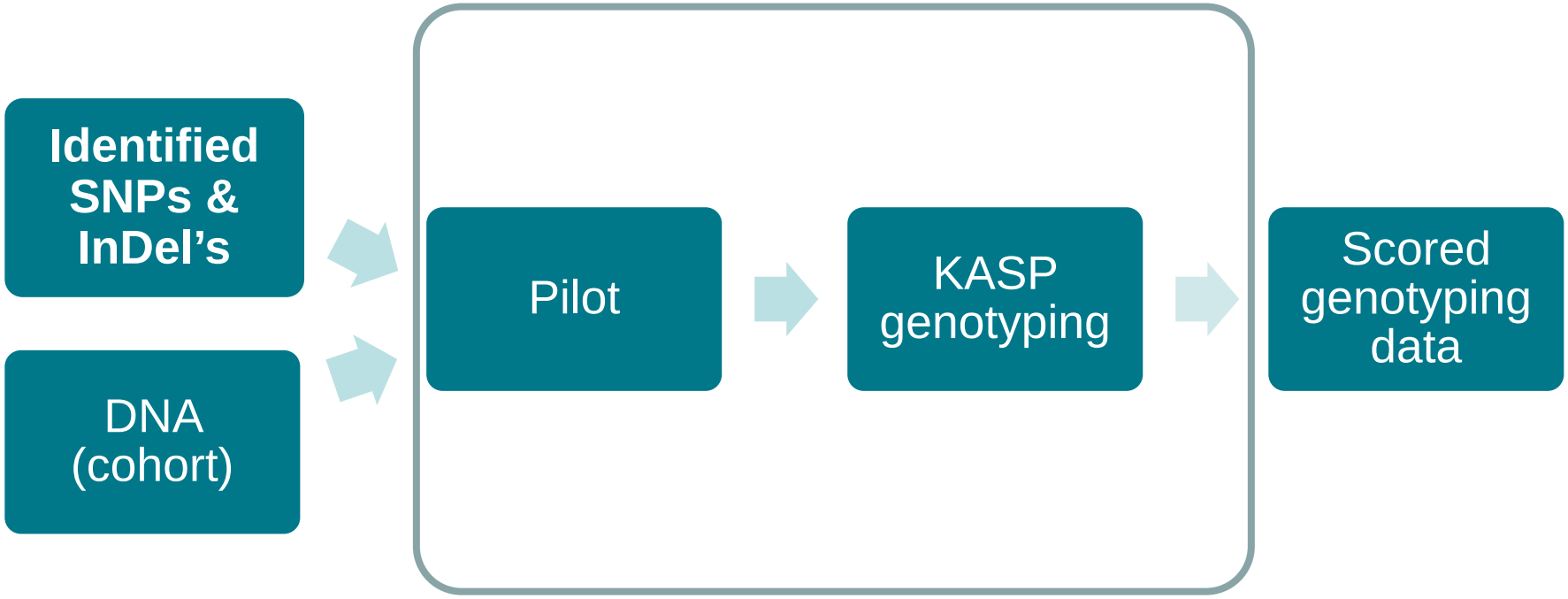
- Whole exome enrichment
  - SureSelect Human All Exon v4+UTRs – 71Mb
  - Illumima TruSeq human all exome – 61MB
- Exome sequencing
  - HiSeq 2000

Extraction → SNP Discovery → SNP Genotyping

Cohort study project support services

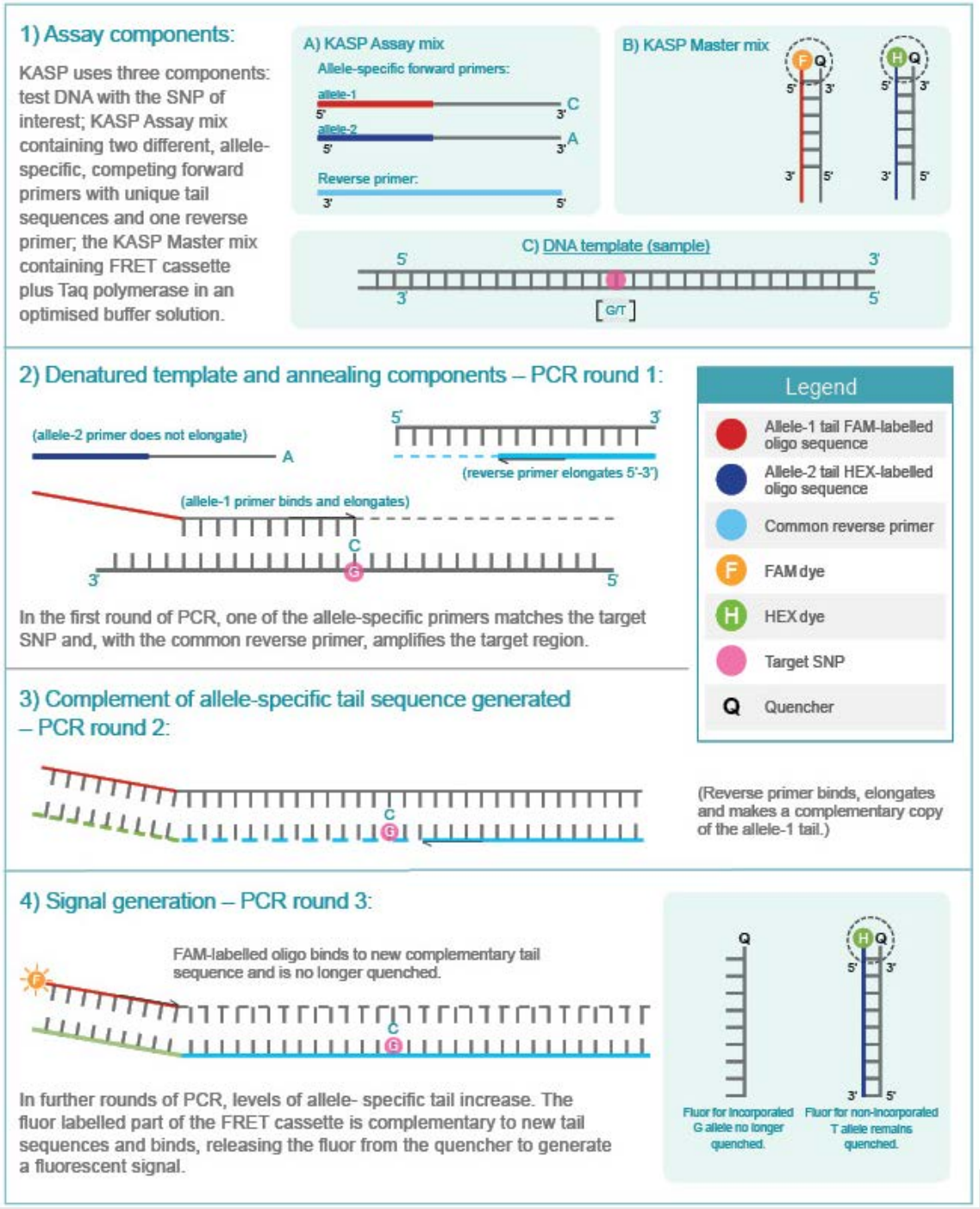


Genotyping module



Extraction → SNP Discovery → SNP Genotyping

KASP™ chemistry



KASP genotyping in action

- We deliver over 1.5 Million PCR reactions / genotyping data point per day

Extraction → **SNP Discovery** → **SNP Genotyping**

Reference project

- **Name**:
  GEFOS (http://www.gefos.org/)
- **Location:**
  USA, Denmark, France, Germany, Greece, Italy, The Netherlands, Norway, Spain, Sweden and the United Kingdom
- **LGC Genomics solutions provided (completed):**
  85.000 DNA samples, 83 SNP's, 24 group world wide consortium
- **Reference:**
  Erasmus MC, Rotterdam

Reference project

- **Name**:
  Whitehall II (http://www.ucl.ac.uk/whitehallII)
- **Location:**
  United Kingdom
- **LGC Genomics solutions provided (on-going):**
  NAP and SNP genotyping on 10.000 samples (several projects incl. DNA storage, sample tracking and sample handling)
- **Reference:**
  Prof. Dr. Aroon Hingorani (UCL):
  "For cohort genotyping LGC Genomics is unbeatable"

Reference project

- **Name**:
  EPIGEN (http://www.epigenchlamydia.eu)

- **Location:**
  Denmark, The Netherlands, Spain and the United Kingdom
- **LGC Genomics solutions provided (on-going):**
  NAP & WGA 5.000 serum + SNP Discovery (450 samples, Aros AB) + SNP Genotyping 10.000 samples
- **Reference:**
  Prof. Dr. Servaas Morre: *"Facilitating a complete solution was* decisive in outsourcing to *LGC" [vs. BGI]*

How can we help you?

- Tell us about your research goals and needs
- Get a project specific price quote
- Start a free pilot

www.lgcgenomics.com