TOSOH

Tosoh Automated
Glycohemoglobin Analyzer

HLC-723G8

ß-Thalassaemia Analysis Mode

TOSOH BIOSCIENCE

Pathology

The inherited haemoglobin disorders (aka haemoglobinopathies) are the world's most common diseases attributable to single gene defects. An estimated 7 % of our global population is a carrier and each year 300,000 to 500,000 babies are born with severe forms of such disorders (WHO 1989). Although these disorders are most frequently encountered in tropical regions, migration of populations has lead to global spread, and these disorders are now found in most countries.[1]

Haemoglobinopathies fall into two main groups: (1) structural haemoglobin variants, caused by an alteration in the globin protein structure, and (2) thalassaemias, caused by defective haemoglobin chain production.[1,2]

Many haemoglobinopathies are of no clinical significance whereas others are associated with severe morbidity and mortality. Today, no cure exists for these severe haemoglobinopathies, with exception for a few patients that can obtain a bone marrow transplant. Thus, the major approaches to control, reduce and manage these diseases are population screening, genetic counselling and prenatal diagnosis, and management of the symptoms.[1]

Compact
W 530 mm
D 515 mm
H 482 mm
34 kg

The diagnostic service

The diagnosis of inherited haemoglobin disorders requires a combination of techniques. One of the techniques used for the detection and quantification of haemoglobins F and A_2, as well as the detection of abnormal haemoglobins, is High Performance Liquid Chromatography (HPLC). For correct interpretation of the results obtained using HPLC, it is essential to know the age of the patient, the ethnic origin, the red cell indices and the clinical features, if any.[2]

With over 35 years of world leading HPLC experience, Tosoh's ion exchange HPLC offers highly reliable and precise quantification and detection of haemoglobins F and A_2 and allows the detection of a wide range of abnormal haemoglobins.

Tosoh Automated Glycohemoglobin Analyzer HLC-723G8: premium HPLC Evolution.

REFERENCES 1. David Weatherall, Olu Akinyanju, Suthat Fucharoen, Nancy Olivieri, and Philip Musgrove, "Inherited Disorders of Hemoglobin." 2006. Disease Control Priorities in Developing Countries (2nd Edition), ed., 663-680. New York: Oxford University Press. DOI: 10.1596/978-0-821-36179-5/Chpt-34.
2. Barbara J. Bain, "Haemoglobinopathy Diagnosis" 2nd edition 2006, Blackwell Science. ISBN 1-4051-3516-6.

The G8 offers you reliability, precision and ease-of-use.

- HbF and HbA_2 results obtained in 6 minutes.
- Simple finger tight connectors permit quick, convenient and easy replacement of columns and pre-filters.
- Automated daily maintenance.
- Optional integration to Tosoh Europe N.V. PIANO-software allows full data management capabilities including Levey-Jennings charts and chromatogram library.
- Highly reliable and precise measurement of haemoglobins F and A_2.

Intra-Assay precision

N = 10	Mean HbA_2 (%)	SD	CV (%)	Mean HbF (%)	SD	CV (%)
Normal	2.81	0.01	0.42	0.41	0.01	2.43
ß-Thalassaemia Trait	6.48	0.03	0.50	5.60	0.02	0.43

Inter-Assay precision

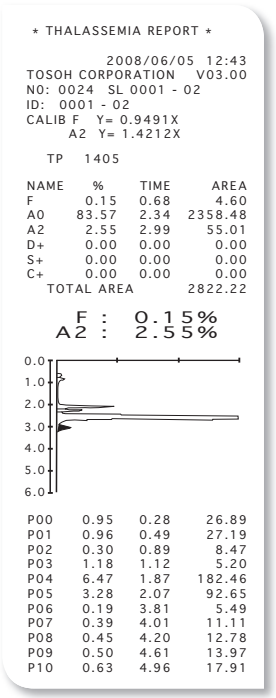
N = 15	Mean HbA_2 (%)	SD	CV (%)	Mean HbF (%)	SD	CV (%)
Normal	2.84	0.05	1.62	0.40	0.004	0.91
ß-Thalassaemia Trait	6.55	0.10	1.49	5.57	0.03	0.57

Source: Evaluation data obtained by Lenters E. and Slingerland R. in the Isala Klinieken Locatie Weezenlanden, Zwolle, The Netherlands.

The G8 offers best-in-class chromatographic separation.

- The unique TSKgel column dedicated for HbF and HbA_2 measurement ensures high quality results with excellent separation capabilities.
- A highly developed flag check function allows easy programming of user-selectable levels to ensure easy interpretation of results with increased security.

Normal



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* THALASSEMIA REPORT *
          2008/06/05 12:43
TOSOH CORPORATION   V03.00
N0: 0024  SL 0001 - 02
ID:  0001 - 02
CALIB F   Y= 0.9491X
      A2  Y= 1.4212X
   TP   1405
NAME     %      TIME      AREA
F       0.15    0.68      4.60
A0     83.57    2.34   2358.48
A2      2.55    2.99     55.01
D+      0.00    0.00      0.00
S+      0.00    0.00      0.00
C+      0.00    0.00      0.00
  TOTAL AREA           2822.22
     F :  0.15%
     A2 :  2.55%
P00   0.95   0.28   26.89
P01   0.96   0.49   27.19
P02   0.30   0.89    8.47
P03   1.18   1.12    5.20
P04   6.47   1.87  182.46
P05   3.28   2.07   92.65
P06   0.19   3.81    5.49
P07   0.39   4.01   11.11
P08   0.45   4.20   12.78
P09   0.50   4.61   13.97
P10   0.63   4.96   17.91
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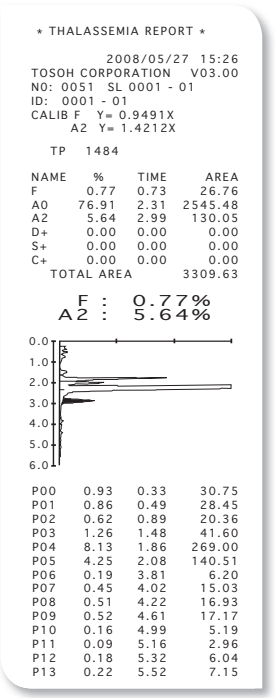
ß-Thalassaemia Trait



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* THALASSEMIA REPORT *
          2008/05/27 15:26
TOSOH CORPORATION   V03.00
N0: 0051  SL 0001 - 01
ID:  0001 - 01
CALIB F   Y= 0.9491X
      A2  Y= 1.4212X
   TP   1484
NAME     %      TIME      AREA
F       0.77    0.73     26.76
A0     76.91    2.31   2545.48
A2      5.64    2.99    130.05
D+      0.00    0.00      0.00
S+      0.00    0.00      0.00
C+      0.00    0.00      0.00
  TOTAL AREA           3309.63
     F :  0.77%
     A2 :  5.64%
P00   0.93   0.33   30.75
P01   0.86   0.49   28.45
P02   0.62   0.89   20.36
P03   1.26   1.48   41.60
P04   8.13   1.86  269.00
P05   4.25   2.08  140.51
P06   0.19   3.81    6.20
P07   0.45   4.02   15.03
P08   0.51   4.22   16.93
P09   0.52   4.61   17.17
P10   0.16   4.99    5.19
P11   0.09   5.16    2.96
P12   0.18   5.32    6.04
P13   0.22   5.52    7.15
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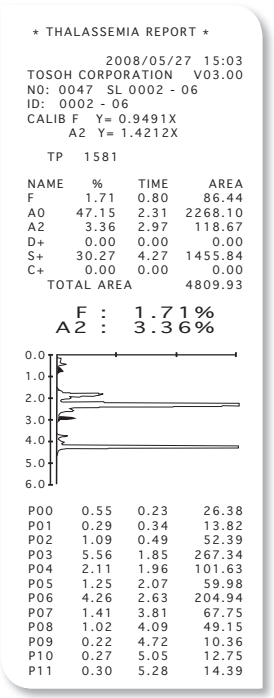
HbS trait



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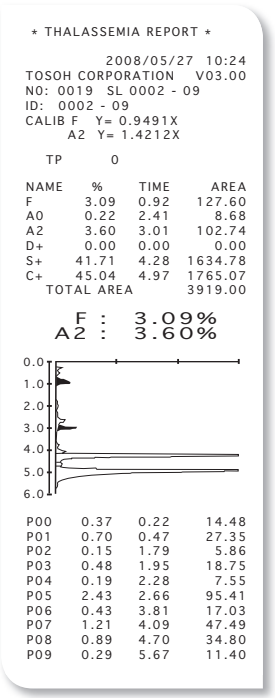
* THALASSEMIA REPORT *
          2008/05/27 15:03
TOSOH CORPORATION   V03.00
N0: 0047  SL 0002 - 06
ID:  0002 - 06
CALIB F   Y= 0.9491X
      A2  Y= 1.4212X
   TP   1581
NAME     %      TIME      AREA
F       1.71    0.80     86.44
A0     47.15    2.31   2268.10
A2      3.36    2.97    118.67
D+      0.00    0.00      0.00
S+     30.27    4.27   1455.84
C+      0.00    0.00      0.00
  TOTAL AREA           4809.93
     F :  1.71%
     A2 :  3.36%
P00   0.55   0.23   26.38
P01   0.29   0.34   13.82
P02   1.09   0.49   52.39
P03   5.56   1.85  267.34
P04   2.11   1.96  101.63
P05   1.25   2.07   59.98
P06   4.26   2.63  204.94
P07   1.41   3.81   67.75
P08   1.02   4.09   49.15
P09   0.22   4.72   10.36
P10   0.27   5.05   12.75
P11   0.30   5.28   14.39
```

HbSC disease



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* THALASSEMIA REPORT *
          2008/05/27 10:24
TOSOH CORPORATION   V03.00
N0: 0019  SL 0002 - 09
ID:  0002 - 09
CALIB F   Y= 0.9491X
      A2  Y= 1.4212X
   TP      0
NAME     %      TIME      AREA
F       3.09    0.92   127.60
A0      0.22    2.41     8.68
A2      3.60    3.01   102.74
D+      0.00    0.00      0.00
S+     41.71    4.28  1634.78
C+     45.04    4.97  1765.07
  TOTAL AREA           3919.00
     F :  3.09%
     A2 :  3.60%
P00   0.37   0.22   14.48
P01   0.70   0.47   27.35
P02   0.15   1.79    5.86
P03   0.48   1.95   18.75
P04   0.19   2.28    7.55
P05   2.43   2.66   95.41
P06   0.43   3.81   17.03
P07   1.21   4.09   47.49
P08   0.89   4.70   34.80
P09   0.29   5.67   11.40
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