

# HLA-Ready Gene

## THE SSP-PCR SYSTEM

CE certified detection of HLA-disease associations

Ready Gene

SuBiTo

FluoGene

Software

PCR & Elektrophorese

Ready Plate

DNA Extraktion

Life Science

## HLA-DISEASE ASSOCIATION KITS BASED ON SSP

- Ideal for screening patients due to only a few PCR reactions (exclusion diagnostics)
- Integrated positive and negative control DNA as required by International Standards for Histocompatibility Testing (e.g. ASHI/EFI).
- Integrated negative control
- Fast analysis due to allele specific amplification
- Simplified interpretation by given allele frequencies
- Flexible format by dried PCR mixes in strips of 8 wells
- Identical workflow with protocol sheets adapted for all kits
- Colour coded kits
- One PCR program for all systems
- Including base pair marker Gen Ladder 50s
- **CE** certified for IVD use

## TAQ POLYMERASE INCLUDED IN ALL KITS

NEW

- All HLA-Ready Gene kits for HLA disease associations contain a separate tube of validated Axi-Taq polymerase (100 U)
- More safety – whole system is CE certified
- Same price – no extra costs for the polymerase

### HLA-Ready Gene B27 – ANKYLOSING SPONDYLITIS (MORBUS BECHTEREW)

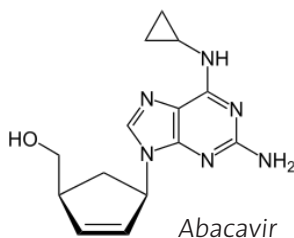
- Only one PCR reaction – ideal for screening patients for HLA-B\*27.
- Detection of the clear associated alleles HLA-B\*27:02, \*27:04, \*27:05, \*27:14 and alleles with questionable association: HLA-B\*27:06, \*27:07, \*27:09.
- Morbus Bechterew is an inflammatory rheumatic disease mainly affecting the spine and the pelvis, which could lead to an ossification of the vertebrae and joints.
- Association with other autoimmune diseases like Morbus Reiter, psoriatic arthritis, juvenile idiopathic arthritis with enthesitis and rheumatoid arthritis.

### HLA-Ready Gene B5/57 – MORBUS BEHÇET & HSR TO ABACAVIR

- 8 PCR reactions for the detection of HLA-B\*51 (associated with Morbus Behçet) and HLA-B\*57 (associated with hypersensitivity reaction (HSR) to Abacavir).
- Behçet disease (Behçet's syndrome, Morbus Behçet, silk road disease) is associated with HLA-B\*51 and a form of vasculitis that could lead to ulceration and other lesions. The resulting inflammation affects blood vessels, usually veins and capillaries. Symptoms occur mainly in the vessels of the skin, eyes and mucous membranes.

### HLA-Ready Gene B57 – HYPERSENSITIVITY REACTION (HSR) TO ABACAVIR

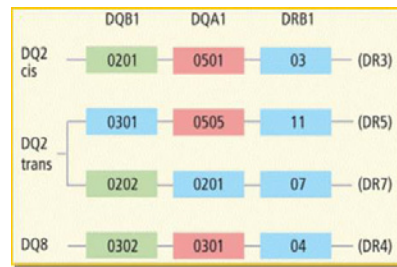
- Only one PCR reaction – ideal for screening patients for HLA-B\*57:01 – probability of detection of HLA-B\*57:01 with only one reaction > 99%
- HIV infected, HLA-B\*57:01 positive patients who are treated with Abacavir could show a hypersensitivity reaction (HSR) in terms of gastrointestinal and respiratory symptoms, fever and skin rash.



# HLA-Ready Gene

## HLA-Ready Gene Coeliac Disease

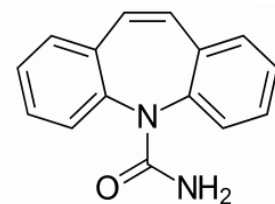
- Only 2 PCR multiplex reactions for screening HLA-DQB1\*02:01, 02, HLA-DQB1\*03:02, HLA-DQA1\*05:01 and HLA-DQA1\*05:05.
- Coeliac Disease is one of the most frequent chronic diseases of the small intestine affecting genetic predisposed individuals. The disease is caused by intolerance against gluten (protein in diverse types of grains like wheat, rye, barley or others).
- HLA Alleles associated with Coeliac Disease:
  - HLA-DQA1\*0301, \*0501, \*0505
  - HLA-DQB1\*0201, \*0202, \*0302
- Alleles that do not need to be detected: HLA-DQA1\*0301 practically does not need to be evaluated since in Coeliac Disease it has always been found in association with HLA-DQB1\*0302. It is also not necessary to verify HLA-DQB1\*0301 and the alleles listed in the figure as these are always present in linkage disequilibrium.
- The finding that Coeliac Disease is the most HLA associated disorder has resulted in inclusion of HLA typing as new diagnostic parameter in the guidelines of ESPGHAN (European Society for Paediatric Gastroenterology, Hepatology and Nutrition) and DGVS (Deutsche Gesellschaft für Gastroenterologie, Verdauungs- und Stoffwechselerkrankungen).



Haplotypes associated with Coeliac Disease

## HLA-Ready Gene A31 - HYPERSENSITIVITY REACTION (HSR) TO CARBAMAZEPINE

- Only one PCR reaction
  - ideal for screening patients for HLA-A\*31.
- Carbamazepine is commonly prescribed for the treatment of epilepsy, trigeminal neuralgia and bipolar disorders.
- The HLA-A\*31:01 allele is strongly associated with Carbamazepine induced hypersensitivity syndrome in Northern European patients. Furthermore it is a risk factor for Carbamazepine induced maculopapular exanthema in Han Chinese populations and Stevens-Johnson Syndrome and toxic epidermal necrolysis (SJS-TEN) in patients from Japan and Northern Europe.
- Even though the presence of the HLA-A\*31:01 allele is neither necessary nor sufficient for the development of a HSR to Carbamazepine, it is correlated with a significantly increased risk.
- A negative HLA-A\*31 reaction is associated with a decreased risk of developing a HSR to Carbamazepine.
- McCormack et al.: HLA-A\*3101 and Carbamazepine-induced hypersensitivity reactions in Europeans, *N Engl J Med* 2011; 364: 1134-43.



Carbamazepine



# HLA-Ready Gene

## HLA-Ready Gene Narcolepsy

- Only 1 PCR reaction for HLA-DQB1\*06:02 – ideal for screening patients for narcolepsy.
- There is no need for the detection of HLA-DRB1\*15:01 and HLA-DQA1\*01:02 since they are associated in linkage disequilibrium with HLA-DQB1\*06:02.
- Narcolepsy („sleeping sickness“, „slumber addiction“) belongs to the group of sleep disorders (dyssomnia), which are based on a neurological disorder of the sleep-wake rhythm. The cause of the disorder is a selective loss of neurons of the perifornical hypothalamus which produce hypocretins (orexins).
- The majority of the narcolepsy patients is positive for HLA-DQB1\*06:02.

## ORDER INFORMATION

ARTICLE NO.	HLA – DISEASE ASSOCIATION KITS	REACTIONS/TEST	TESTS/KIT
002 058 032	<b>HLA-Ready Gene B27</b> Detection of HLA-B*27 alleles associated with Morbus Bechterew	1	32
002 058 096	<b>HLA-Ready Gene B27</b> Detection of HLA-B*27 alleles associated with Morbus Bechterew	1	96
002 059 012	<b>HLA-Ready Gene B5/57</b> Detection of allelic groups associated with Morbus Behçet (HLA-B*51) and HSR to Abacavir (HLA-B*57)	8	12
002 062 032	<b>HLA-Ready Gene B57</b> Screening HSR to Abacavir (HLA-B*57)	1	32
002 061 032	<b>HLA-Ready Gene Coeliac Disease</b> Screening HLA-DQA and HLA-DQB alleles associated with Coeliac Disease	2	32
002 064 032	<b>HLA-Ready Gene Narcolepsy</b> For the detection of HLA alleles positively associated with Narcolepsy	1	32
002 065 032	<b>HLA-Ready Gene A31</b> Screening HSR to Carbamazepine	1	32

## DETECTION OF HLA-B\*27 ALSO FOR HLA-FLUOGENE!



ARTICLE NO.	HLA – DISEASE ASSOCIATION KITS	REACTIONS/TEST	TESTS/KIT
002 078 048	<b>HLA-FluoGene B27</b> TaqMan based detection of HLA-B*27 alleles associated with Morbus Bechterew	1	48



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