

# REPORT OF THE 43<sup>rd</sup> INTERNATIONAL MICA EXCHANGE

## APRIL 11, 2022

MICA

181 - 186

For the 43<sup>rd</sup> MICA Exchange, 6 DNA samples (MICA #181 - MICA#186) were shipped to 15 laboratories worldwide. MICA typing results were received

from 13 laboratories. Results are summarized on Table 1 and individual laboratory results are listed on tables 2 - 7.

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**MICA #181.** MICA\*009-MICA\*027 was the reported MICA type for this sample from an Asian donor. MICA\*009 was assigned by 10 labs, with 7 labs assigning the subtype as MICA\*009:01. Several labs were unable to resolve MICA\*009 from MICA\*049. MICA\*049 differs from MICA\*009:01 by a single nucleotide substitution in exon 6 at codon 333 (ACG → ATG), in which threonine is replaced by methionine in MICA\*049.

MICA\*027 was assigned by 10 labs, with 7 labs assigning the subtype as MICA\*027:01. The remaining labs, were unable to resolve MICA\*027 from MICA\*048. MICA\*048 differs from MICA\*027 by a single nucleotide substitution in exon 5 at codon 316 (GAG → GAT). The substitution results in an amino acid change from glutamic acid to aspartic acid in MICA\*048.

**MICA #182.** MICA\*008-MICA\*018 was the reported MICA type for this sample from a Hispanic donor. MICA\*008 was assigned by 10 labs, with 7 labs assigning the subtype as MICA\*008:01. One lab assigned MICA\*008/\*088N and another assigned MICA\*007/\*027/\*048/\*087.

MICA\*018 was assigned in complete consensus as the second MICA allele, with 11 labs assigning MICA\*018:01 as the subtype.

**MICA #183.** MICA\*002-MICA\*007 was the reported MICA type for this sample from a Hispanic donor. MICA\*002 was assigned by 9 labs, with 7 labs assigning MICA\*002:01. Three labs were unable to resolve MICA\*002 from MICA\*020 and MICA\*055. MICA\*020 and MICA\*055 differ from MICA\*002 by the number of GCT repeats in their transmembrane domains (exon 5), where MICA\*002 has 9 GCT repeats, MICA\*020 has 10 GCT repeats, and MICA\*055 has 8 GCT repeats. Additional ambiguities were also reported by several labs.

MICA\*007 was assigned by 10 labs, with 7 labs assigning MICA\*007:01. One lab assigned MICA\*007/\*026 and another assigned MICA\*007/\*026/\*029/\*040. MICA\*007 and MICA\*026 are identical in their extra cellular domains but differ in their transmembrane domains where MICA\*007 has 4 GCT repeats whereas MICA\*026 has 6 GCT repeats.

**MICA #184.** This sample from a Black donor was homozygous for MICA\*015. MICA\*015 was assigned by 12 labs, with 4 labs assigning MICA\*015:01.

**MICA #185.** MICA\*010-MICA\*012 was the reported MICA type for this cell from an Asian donor. MICA\*010 was reported by 10 labs, with 8 labs assigning the subtype as MICA\*010:01. One lab assigned MICA\*010/\*069 and 1 lab assigned MICA\*010:01/\*065/\*069. MICA\*065 differs from MICA\*010 in exon 4 by a single nucleotide substitution at codon 190 (CGC → TGC), leading to an amino acid change from arginine to cysteine in MICA\*065. MICA\*069 differs from MICA\*010:01 by a single nucleotide substitution in exon 6 at codon 350 (GCT → GAT), which results in an amino acid change from alanine to aspartic acid in MICA\*069.

MICA\*012, was reported in complete consensus. Nine labs assigned the subtype as MICA\*012:01 and 1 lab assigned MICA\*012:01/\*012:04.

**MICA #186.** MICA\*004-MICA\*101/\*047 was the reported MICA type for this sample from a Caucasian/Hispanic donor. This sample was examined previously as MICA sample nos. #114 (2016) and #177 (2021). In this present re-typing, MICA\*004 was reported in complete consensus, with 8 labs assigning MICA\*004:01.

Labs were split in the assignment of the second allele. Nine labs assigned MICA\*101, 3 labs assigned MICA\*047, and 1 lab assigned MICA\*047/\*101. In the 2016 study, all 17 labs reported MICA\*047. MICA\*101 was officially assigned by the WHO Nomenclature committee in January 2020. MICA\*101 differs from MICA\*047 in exon 6, by a single nucleotide substitution at codon 321 (CTG → GTG), which results in an amino acid change from leucine to valine in MICA\*101.

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**Table 1. Summary of 43<sup>rd</sup> MICA Exchange #181-#186**

<b>MICA#181</b>	
13 labs	
<b>Allele-1</b>	<b>%(n)</b>
*009:01	53(7)
*009	23(3)
*009/*049	15(2)
*009:01/*049:01/*024	8 (1)
13 labs	
<b>Allele-2</b>	<b>%(n)</b>
*027:01	53(7)
*027	23(3)
*027/*048	8 (1)
*027:01/*048/*076	8 (1)
*008/*027/*048/*053/*063N/*070/*087	8 (1)

<b>MICA#182</b>	
13 labs	
<b>Allele - 1</b>	<b>%(n)</b>
*008:01	53(7)
*008	23(3)
*008:01/*008:03/*008:04	8 (1)
*008/*088N	8 (1)
*008/*027/*048/*087	8 (1)
13 labs	
<b>Allele - 2</b>	<b>%(n)</b>
*018:01	84(11)
*018:01/*018:02	8 (1)
*018	8 (1)

<b>MICA#183</b>	
13 labs	
<b>Allele - 1</b>	<b>%(n)</b>
*002:01	53(7)
*002	15(2)
*002:01/*002:02/*110	8 (1)
*002/*020/*055	8 (1)
*002/*020/*023/*052/*055/*089/*090	8 (1)
*002/*020/*055/*086/*089/*090/*091	8 (1)
12 labs	
<b>Allele - 2</b>	<b>%(n)</b>
*007:01	61(7)
*007	23(3)
*007/*026	8 (1)
*007/*026/*029/*040	8 (1)

<b>MICA#184</b>	
13 labs	
<b>Allele-1</b>	<b>%(n)</b>
*015:01	31(4)
*015	61(8)
*002	8 (1)
13 labs	
<b>Allele-2</b>	<b>%(n)</b>

<b>MICA#185</b>	
13 labs	
<b>Allele - 1</b>	<b>%(n)</b>
*010:01	62(8)
*010	15(2)
*010/*069	15(2)
*010:01/*065/*069	8 (1)
13 labs	
<b>Allele - 2</b>	<b>%(n)</b>
*012:01	69(9)
*012:01/*012:04	8 (1)
*012	13(3)

<b>MICA#186</b>	
13 labs	
<b>Allele - 1</b>	<b>%(n)</b>
*004:01	62(8)
*004	38(5)
13 labs	
<b>Allele - 2</b>	<b>%(n)</b>
*101	69(9)
*047	23(3)
*047/*101	8 (1)

**Table 2. MICA typing results reported by participating laboratories**

MICA# 181 (Asian)	CTR	Allele-1	Allele-2	Others	Method
	733	*009:01	*027:01	*024, *076	NGS
	762	*009:01	*027:01		NGS
	3753	*009/*049	*027/*048		SSO
	3798	*009	*027		NGS
	3966	*009	*027		SSO
	4337	*009	*027		SSP
	4345	*009/*049	*008/*027/*048/*053/*063N/*070/*087		SBT
	5133	*009:01	*027:01	*024, *076	NGS
	8035	*009:01	*027:01		NGS
	8047	*009:01/*049:01/*024	*027:01/*048/*076		NGS
	8073	*009:01	*027:01		NGS
	8105	*009:01	*027:01		NGS
	8114	*009:01	*027:01		NGS

**Table 3. MICA typing results reported by participating laboratories**

MICA# 182 (Hispanic)	CTR	Allele-1	Allele-2	Others	Method
	733	*008:01	*018:01		NGS
	762	*008:01	*018:01		NGS
	3753	*008/*088N	*018		SSO
	3798	*008	*018:01		NGS
	3966	*008	*018:01		SSO
	4337	*008	*018:01		SSP
	4345	*008/*027/*048/*087	*018:01		SBT
	5133	*008:01	*018:01		NGS
	8035	*008:01	*018:01		NGS
	8047	*008:01/*008:03/*008:04	*018:01/*018:02		NGS
	8073	*008:01	*018:01		NGS
	8105	*008:01	*018:01		NGS
	8114	*008:01	*018:01		NGS

**Table 4. MICA typing results reported by participating laboratories**

MICA# 183 (Hispanic)	CTR	Allele-1	Allele-2	Others	Method
	733	*002:01	*007:01		NGS
	762	*002:01	*007:01		NGS
	3753	*002/*020/*055/*086/*089/*090/*091	*007/*026	*092/*093	SSO
	3798	*002	*007		NGS
	3966	*002:01	*007		SSO
	4337	*002/*020/*055	*007		SSP
	4345	*002/*020/*023/*052/*055/*089/*090	*007/*026/*029/*040		SBT
	5133	*002:01	*007:01	*002:02, *111:02	NGS
	8035	*002:01	*007:01	*002:02, *111:02	NGS
	8047	*002:01/*002:02/*110	*007:01		NGS
	8073	*002:01	*007:01		NGS
	8105	*002:01	*007:01		NGS
	8114	*002:--	--:--	*002:01,*007:01 /*002:02,*111:02	NGS

<b>Table 5. MICA typing results reported by participating laboratories</b>					
<b>MICA# 184 (Black)</b>	<b>CTR</b>	<b>Allele-1</b>	<b>Allele-2</b>	<b>Others</b>	<b>Method</b>
	733	*015			NGS
	762	*015:01			NGS
	3753	*015	*015		SSO
	3798	*015	*015		NGS
	3966	*015	*015		SSO
	4337	*015	*015		SSP
	4345	*002:XX	*002		SBT
	5133	*015:01			NGS
	8035	*015:01	-		NGS
	8047	*015	*015		NGS
	8073	*015:01	*015:01		NGS
	8105	*015	*015		NGS
	8114	*015	*015		NGS

**Table 6. MICA typing results reported by participating laboratories**

<b>MICA# 185 (Asian)</b>	<b>CTR</b>	<b>Allele-1</b>	<b>Allele-2</b>	<b>Others</b>	<b>Method</b>
	733	*010:01	*012:01		NGS
	762	*010:01	*012:01		NGS
	3753	*010/*069	*012		SSO
	3798	*010	*012		NGS
	3966	*010:01	*012:01		SSO
	4337	*010	*012:01		SSP
	4345	*010/*069	*012		SBT
	5133	*010:01	*012:01		NGS
	8035	*010:01	*012:01		NGS
	8047	*010:01/*065/*069	*012:01/*012:04		NGS
	8073	*010:01	*012:01		NGS
	8105	*010:01	*012:01		NGS
	8114	*010:01	*012:01		NGS

<b>Table 7. MICA typing results reported by participating laboratories</b>					
<b>MICA# 186 (Caucasian/ Hispanic)</b>	<b>CTR</b>	<b>Allele-1</b>	<b>Allele-2</b>	<b>Others</b>	<b>Method</b>
	733	*004:01	*101		NGS
	762	*004:01	*101		NGS
	3753	*004	*047		SSO
	3798	*004	*101		NGS
	3966	*004	*047		SSO
	4337	*004	*101		SSP
	4345	*004	*047		SBT
	5133	*004:01	*101		NGS
	8035	*004:01	*101		NGS
	8047	*004:01	*047/*101		NGS
	8073	*004:01	*101		NGS
	8105	*004:01	*101		NGS
	8114	*004:01	*101		NGS