

Statement

To whom it may concern:

We Xiamen Boson Biotech Co., Ltd., a manufacturer of various types of Diagnostic Kits, having factories at 90-94 Tianfeng Road, Jimei North Industrial Park, Xiamen, P.R.C. do hereby confirm that the Boson Rapid SARS-CoV-2 Antigen Test Card detects the N protein of the SARS-CoV-2 virus. Omicron evolved from the previous BA.1 variant into different subvariants of BA.2, BA.3, BA.4 and BA.5 et al. The biggest difference between the different Omicron subvariants occurs on the S protein, with very little difference on the N protein, as shown in the table below:

Variant	BA.1	BA.2/ BA.2.3.20/ BA.2.10/ BA.2.12.1/ BA.2.75/ BA.2.75.2	BA.3	BA.4/BA.4.6	BA.5	BE.3	XE	BQ.1/BQ.1.1
N protein mutation sites	P13L del31/33 R203K G204R	P13L del31/33 R203K G204R S413R	P13L del31/33 R203K G204R S413R	P13L del31/33 P151S R203K G204R S413R	P13L del31/33 R203K G204R S413R	P13L del31/33 E136D P151S R203K G204R S413R	P13L del31/33 R203K G204R S413R	P13L del31/33 E136D R203K G204R S413R
Variant	BF.7	XBB/XBB.1.5/ XBB.1.16	BJ.1	CH.1.1	EG.5/EG.5.1/EG.5.1.1	EG.5.2	BA.2.86	
N protein mutation sites	P13L del30/31/33 R32del S33F R203K G204R S413R	P13L del31/33 R203K G204R S413R	P13L del31/33 R203K G204R T282I S413R	P13L del31/33 R203K G204R S413R	P13L del31/33 R203K G204R S413R	P13L del31/33 L161F R203K G204R S413R	NP13L del31/33 R203K G204R Q229K S413R	

Boson internally evaluated the detection of BA.1, and external research included the detection of BA.1 and BA.2 (Denmark Statens Serum Institut) and BA.4 and BA.5 (Denmark Statens Serum Institut), the results were all detectable. The results of Omicron BA.1 and BA.2 can be found at

<https://en.ssi.dk/-/media/arkiv/subsites/covid19/diagnostik/afprvning-af-sars-cov-2-antigentests-for-pvisning-af-varianter.pdf?la=en>. The results of Omicron BA.4 and BA.5 can be found at <https://en.ssi.dk/-/media/arkiv/subsites/covid19/diagnostik/afprvning-af-sarscov2-antigen-tests-for-pvisning-af-nye-varianter-i-dk-omikron-ba4-og-ba5.pdf?la=en>.

As shown in the table above, the N protein variation sites of BA.2, BA.2.3.20, BA.2.10, BA.2.12.1, BA.2.75, BA.2.75.2, BA.3, BA.5, XE, XBB/XBB.1.5, CH.1.1, XBB.1.16 and EG.5/EG.5.1/EG.5.1.1 are completely identical, so Boson reagent can also detect BA.2.3.20, BA.2.10, BA.2.12.1, BA.2.75, BA.2.75.2, BA.3, XE, XBB/XBB.1.5, CH.1.1 and XBB.1.16. BE.3 and BA.4/BA.4.6 are different except for the 136th amino acid, and other N protein variation sites are completely identical. Due to the amino acid mutation at position 136 of BE.3 lie without the epitope region for Boson Rapid SARS-CoV-2 Antigen Test Card, So Boson reagent can also detect BE.3. BQ.1/BQ.1.1 and BA.5 are different except for the 136th amino acid, and other N protein variation sites are completely identical. Due to the amino acid mutation at position 136 of BQ.1/BQ.1.1 lie without the epitope region for Boson Rapid SARS-CoV-2 Antigen Test Card, So Boson reagent can also detect BQ.1/BQ.1.1. BF.7 and BA.5 are different except for the 30th, 32nd and 33rd amino acid, and other N protein variation sites are completely identical. Due to the amino acid mutation at position 30-33 of BF.7 lie without the epitope region for Boson Rapid SARS-CoV-2 Antigen Test Card, So Boson reagent can also detect BF.7. BJ.1 and BA.2 are different except for the 282nd amino acid, and other N protein variation sites are completely identical. Due to the amino acid mutation at position 282 of BJ.1 lie without the epitope region for Boson Rapid SARS-CoV-2 Antigen Test Card, So Boson reagent can also detect BJ.1. EG.5.2 and BA.2 are different except for the 161st amino acid, and other N protein variation sites are completely identical. Due to the amino acid mutation at position 161 of EG.5.2 lie without the epitope region for Boson Rapid SARS-CoV-2 Antigen Test Card, So Boson reagent can also detect EG.5.2. BA.2.86 and BA.2 are different except for the 229th amino acid, and other N protein variation sites are completely identical. Due to the amino acid mutation at position 229 of BA.2.86 lie without the epitope region for Boson Rapid SARS-CoV-2 Antigen Test Card, So Boson reagent can also detect BA.2.86.

In summary, Boson Rapid SARS-CoV-2 Antigen Test Card can detect BA.1, BA.2, BA.2.3.20, BA.2.10, BA.2.12.1, BA.2.75, BA.2.75.2, BA.3, BA.4, BA.4.6, BA.5, BE.3, XE, BQ.1, BQ.1.1, BF.7, XBB, XBB.1.5, BJ.1, CH.1.1, XBB.1.16, EG.5/EG.5.1/EG.5.1.1, EG.5.2 and BA.2.86.

