

**Supplementary table 8 : *Helicobacter pylori* infection status of analyzed samples**

| Sample ID     | Gender | Age | Age group | Primary diagnosis     | <i>H.pylori</i> status (sequence) |
|---------------|--------|-----|-----------|-----------------------|-----------------------------------|
| 226973_2DT.v4 | Female | 48  | 2         | Atrophic gastritis    | <i>H. pylori</i> negative         |
| 973_1_Di.v4   | Male   | 35  | 1         | Atrophic gastritis    | <i>H. pylori</i> negative         |
| 973_1_T.v4    | Male   | 35  | 1         | Atrophic gastritis    | <i>H. pylori</i> negative         |
| 973_15_Dou.v4 | Male   | 32  | 1         | Atrophic gastritis    | <i>H. pylori</i> negative         |
| 973_19_Di.v4  | Male   | 62  | 3         | Atrophic gastritis    | <i>H. pylori</i> negative         |
| 973_2_DOU.v4  | Female | 48  | 2         | Atrophic gastritis    | <i>H. pylori</i> negative         |
| 973_5_DI.v4   | Male   | 43  | 2         | Atrophic gastritis    | <i>H. pylori</i> negative         |
| 973_6_T.v4    | Female | 41  | 2         | Atrophic gastritis    | <i>H. pylori</i> negative         |
| 973_7_Dou.v4  | Female | 31  | 1         | Atrophic gastritis    | <i>H. pylori</i> negative         |
| 97HK_9T.v4    | Male   | 50  | 2         | Atrophic gastritis    | <i>H. pylori</i> negative         |
| HK_1_Dou.v4   | Male   | 62  | 3         | Atrophic gastritis    | <i>H. pylori</i> negative         |
| HK_14_Di.v4   | Male   | 66  | 3         | Atrophic gastritis    | <i>H. pylori</i> negative         |
| HK_15_Dou.v4  | Female | 55  | 2         | Atrophic gastritis    | <i>H. pylori</i> negative         |
| HK_15_T.v4    | Female | 55  | 2         | Atrophic gastritis    | <i>H. pylori</i> negative         |
| HK_17_Dou.v4  | Female | 43  | 2         | Atrophic gastritis    | <i>H. pylori</i> negative         |
| HK_17_T.v4    | Female | 43  | 2         | Atrophic gastritis    | <i>H. pylori</i> negative         |
| HK_28Dou.v4   | Male   | 60  | 3         | Atrophic gastritis    | <i>H. pylori</i> negative         |
| HK_36_Di.v4   | Female | 49  | 2         | Atrophic gastritis    | <i>H. pylori</i> negative         |
| HK_36_Dou.v4  | Female | 49  | 2         | Atrophic gastritis    | <i>H. pylori</i> negative         |
| HK14Dou246.v4 | Male   | 66  | 3         | Atrophic gastritis    | <i>H. pylori</i> negative         |
| HK14T247.v4   | Male   | 66  | 3         | Atrophic gastritis    | <i>H. pylori</i> negative         |
| HK15DT248.v4  | Female | 55  | 2         | Atrophic gastritis    | <i>H. pylori</i> negative         |
| YJ_Ca_10.v4   | Male   | 72  | 3         | Gastric cancer        | <i>H. pylori</i> negative         |
| YJ_CA_12.v4   | Male   | 45  | 2         | Gastric cancer        | <i>H. pylori</i> negative         |
| YJ_Ca_7.v4    | Male   | 44  | 2         | Gastric cancer        | <i>H. pylori</i> negative         |
| YJ_ca_8.v4    | Male   | 75  | 3         | Gastric cancer        | <i>H. pylori</i> negative         |
| YJ_Ca_9.v4    | Male   | 60  | 3         | Gastric cancer        | <i>H. pylori</i> negative         |
| YJ_Ca6.v4     | Male   | 72  | 3         | Gastric cancer        | <i>H. pylori</i> negative         |
| YJCall265.v4  | Male   | 61  | 3         | Gastric cancer        | <i>H. pylori</i> negative         |
| 104HK_2FT.v4  | Female | 64  | 3         | Intestinal metaplasia | <i>H. pylori</i> negative         |
| HK_11_DI.v4   | Female | 32  | 1         | Intestinal metaplasia | <i>H. pylori</i> negative         |
| HK_11_T.v4    | Female | 32  | 1         | Intestinal metaplasia | <i>H. pylori</i> negative         |
| HK_16_Di.v4   | Female | 45  | 2         | Intestinal metaplasia | <i>H. pylori</i> negative         |
| HK_16_T.v4    | Female | 45  | 2         | Intestinal metaplasia | <i>H. pylori</i> negative         |
| HK_23_Di.v4   | Female | 41  | 2         | Intestinal metaplasia | <i>H. pylori</i> negative         |
| HK_23_Dou.v4  | Female | 41  | 2         | Intestinal metaplasia | <i>H. pylori</i> negative         |
| HK_24_Di.v4   | Male   | 69  | 3         | Intestinal metaplasia | <i>H. pylori</i> negative         |
| HK_24_Dou.v4  | Male   | 69  | 3         | Intestinal metaplasia | <i>H. pylori</i> negative         |
| HK_26T.v4     | Female | 53  | 2         | Intestinal metaplasia | <i>H. pylori</i> negative         |
| HK_30_T.v4    | Female | 57  | 2         | Intestinal metaplasia | <i>H. pylori</i> negative         |
| HK_32_Di.v4   | Female | 59  | 2         | Intestinal metaplasia | <i>H. pylori</i> negative         |

|               |        |    |   |                       |                           |
|---------------|--------|----|---|-----------------------|---------------------------|
| HK_35_Di.v4   | Male   | 56 | 2 | Intestinal metaplasia | <i>H. pylori</i> negative |
| HK_35_Dou.v4  | Male   | 56 | 2 | Intestinal metaplasia | <i>H. pylori</i> negative |
| HK25Dou200.v4 | Male   | 46 | 2 | Intestinal metaplasia | <i>H. pylori</i> negative |
| HK25DT199.v4  | Male   | 46 | 2 | Intestinal metaplasia | <i>H. pylori</i> negative |
| HK25T198.v4   | Male   | 46 | 2 | Intestinal metaplasia | <i>H. pylori</i> negative |
| HK35T.v4      | Male   | 56 | 2 | Intestinal metaplasia | <i>H. pylori</i> negative |
| 29HK_34T.v4   | Female | 53 | 2 | Superficial gastritis | <i>H. pylori</i> negative |
| 973_13_T.v4   | Male   | 31 | 1 | Superficial gastritis | <i>H. pylori</i> negative |
| 973_18_Di.v4  | Female | 47 | 2 | Superficial gastritis | <i>H. pylori</i> negative |
| 973_21_Di.v4  | Female | 47 | 2 | Superficial gastritis | <i>H. pylori</i> negative |
| 973_21_T.v4   | Female | 47 | 2 | Superficial gastritis | <i>H. pylori</i> negative |
| 973_4_T.v4    | Female | 29 | 1 | Superficial gastritis | <i>H. pylori</i> negative |
| HK_21DT202.v4 | Male   | 64 | 3 | Superficial gastritis | <i>H. pylori</i> negative |
| HK_22_T.v4    | Male   | 59 | 2 | Superficial gastritis | <i>H. pylori</i> negative |
| HK_34_Di.v4   | Female | 53 | 2 | Superficial gastritis | <i>H. pylori</i> negative |
| HK_38_Di.v4   | Male   | 58 | 2 | Superficial gastritis | <i>H. pylori</i> negative |
| HK_38_Dou.v4  | Male   | 58 | 2 | Superficial gastritis | <i>H. pylori</i> negative |
| HK12T244.v4   | Male   | 66 | 3 | Superficial gastritis | <i>H. pylori</i> negative |
| 973_15_Di.v4  | Male   | 32 | 1 | Atrophic gastritis    | <i>H. pylori</i> positive |
| 973_15_T.v4   | Male   | 32 | 1 | Atrophic gastritis    | <i>H. pylori</i> positive |
| 973_16_Di.v4  | Male   | 52 | 2 | Atrophic gastritis    | <i>H. pylori</i> positive |
| 973_16_Dou.v4 | Male   | 52 | 2 | Atrophic gastritis    | <i>H. pylori</i> positive |
| 973_16_T.v4   | Male   | 52 | 2 | Atrophic gastritis    | <i>H. pylori</i> positive |
| 973_19_Dou.v4 | Male   | 62 | 3 | Atrophic gastritis    | <i>H. pylori</i> positive |
| 973_19_T.v4   | Male   | 62 | 3 | Atrophic gastritis    | <i>H. pylori</i> positive |
| 973_5_Dou.v4  | Male   | 43 | 2 | Atrophic gastritis    | <i>H. pylori</i> positive |
| 973_5_T.v4    | Male   | 43 | 2 | Atrophic gastritis    | <i>H. pylori</i> positive |
| 973_6_Di.v4   | Female | 41 | 2 | Atrophic gastritis    | <i>H. pylori</i> positive |
| 973_7_Di.v4   | Female | 31 | 1 | Atrophic gastritis    | <i>H. pylori</i> positive |
| 973_7_T.v4    | Female | 31 | 1 | Atrophic gastritis    | <i>H. pylori</i> positive |
| 973_9_DI.v4   | Female | 45 | 2 | Atrophic gastritis    | <i>H. pylori</i> positive |
| HK_1_T.v4     | Male   | 62 | 3 | Atrophic gastritis    | <i>H. pylori</i> positive |
| HK_17_Di.v4   | Female | 43 | 2 | Atrophic gastritis    | <i>H. pylori</i> positive |
| HK_28_Di.v4   | Male   | 60 | 3 | Atrophic gastritis    | <i>H. pylori</i> positive |
| HK_28_T.v4    | Male   | 60 | 3 | Atrophic gastritis    | <i>H. pylori</i> positive |
| HK_33_Di.v4   | Female | 53 | 2 | Atrophic gastritis    | <i>H. pylori</i> positive |
| HK_33_Dou.v4  | Female | 53 | 2 | Atrophic gastritis    | <i>H. pylori</i> positive |
| HK_33_T.v4    | Female | 53 | 2 | Atrophic gastritis    | <i>H. pylori</i> positive |
| HK_4_Di.v4    | Female | 71 | 3 | Atrophic gastritis    | <i>H. pylori</i> positive |
| YJ_Ca_14.v4   | Male   | 61 | 3 | Gastric cancer        | <i>H. pylori</i> positive |
| YJ_Ca_18.v4   | Male   | 61 | 3 | Gastric cancer        | <i>H. pylori</i> positive |
| YJ_Ca_24.v4   | Male   | 62 | 3 | Gastric cancer        | <i>H. pylori</i> positive |
| YJ_Ca_25.v4   | Male   | 62 | 3 | Gastric cancer        | <i>H. pylori</i> positive |

|               |        |    |   |                       |                           |
|---------------|--------|----|---|-----------------------|---------------------------|
| YJ_Ca2.v4     | Male   | 57 | 2 | Gastric cancer        | <i>H. pylori</i> positive |
| YJ_Ca3.v4     | Male   | 52 | 2 | Gastric cancer        | <i>H. pylori</i> positive |
| YJ_Ca4.v4     | Male   | 63 | 3 | Gastric cancer        | <i>H. pylori</i> positive |
| HK_16_DOU.v4  | Female | 45 | 2 | Intestinal metaplasia | <i>H. pylori</i> positive |
| HK_23_T.v4    | Female | 41 | 2 | Intestinal metaplasia | <i>H. pylori</i> positive |
| HK_24_T.v4    | Male   | 69 | 3 | Intestinal metaplasia | <i>H. pylori</i> positive |
| HK_26_Di.v4   | Female | 53 | 2 | Intestinal metaplasia | <i>H. pylori</i> positive |
| HK_26_Dou.v4  | Female | 53 | 2 | Intestinal metaplasia | <i>H. pylori</i> positive |
| HK_3_T.v4     | Male   | 64 | 3 | Intestinal metaplasia | <i>H. pylori</i> positive |
| HK_30_Di.v4   | Female | 57 | 2 | Intestinal metaplasia | <i>H. pylori</i> positive |
| HK_32_Dou.v4  | Female | 59 | 2 | Intestinal metaplasia | <i>H. pylori</i> positive |
| HK_32_T.v4    | Female | 59 | 2 | Intestinal metaplasia | <i>H. pylori</i> positive |
| HK_37_Di.v4   | Male   | 48 | 2 | Intestinal metaplasia | <i>H. pylori</i> positive |
| HK_37_Dou.v4  | Male   | 48 | 2 | Intestinal metaplasia | <i>H. pylori</i> positive |
| HK_37_T.v4    | Male   | 48 | 2 | Intestinal metaplasia | <i>H. pylori</i> positive |
| HK_6_Di.v4    | Female | 42 |   | Intestinal metaplasia | <i>H. pylori</i> positive |
| HK_6_Dou.v4   | Female | 42 | 2 | Intestinal metaplasia | <i>H. pylori</i> positive |
| HK_6_T.v4     | Female | 42 | 2 | Intestinal metaplasia | <i>H. pylori</i> positive |
| HK_8_Di.v4    | Female | 60 | 3 | Intestinal metaplasia | <i>H. pylori</i> positive |
| HK_8_Dou.v4   | Female | 60 | 3 | Intestinal metaplasia | <i>H. pylori</i> positive |
| YJ_Ca_17.v4   | Female | 70 | 3 | Intestinal metaplasia | <i>H. pylori</i> positive |
| 973_4_Di.v4   | Female | 29 | 1 | Superficial gastritis | <i>H. pylori</i> positive |
| 973_13_Di.v4  | Male   | 32 | 1 | Superficial gastritis | <i>H. pylori</i> positive |
| 973_18_Dou.v4 | Female | 47 | 2 | Superficial gastritis | <i>H. pylori</i> positive |
| 973_18_T.v4   | Female | 47 | 2 | Superficial gastritis | <i>H. pylori</i> positive |
| 973_21_Dou.v4 | Female | 47 | 2 | Superficial gastritis | <i>H. pylori</i> positive |
| 973_23T224.v4 | Female | 53 | 2 | Superficial gastritis | <i>H. pylori</i> positive |
| HK_34_Dou.v4  | Female | 53 | 2 | Superficial gastritis | <i>H. pylori</i> positive |
| HK_22_Di.v4   | Male   | 59 | 2 | Superficial gastritis | <i>H. pylori</i> positive |
| HK_22_Dou.v4  | Male   | 59 | 2 | Superficial gastritis | <i>H. pylori</i> positive |
| HK_21_Dou.v4  | Male   | 64 | 3 | Superficial gastritis | <i>H. pylori</i> positive |
| HK_21_T.v4    | Male   | 64 | 3 | Superficial gastritis | <i>H. pylori</i> positive |
| 973_14_T.v4   | Male   | 50 | 2 | Superficial gastritis | <i>H. pylori</i> positive |