**Supplementary Table 1: Correlation between expression of p50, p65*,* IκBα inhibitor*,* associated risk factors, and clinical characteristics of patients with head and neck cancer.**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Use of tobacco** | **Oral hygiene** | **Anatomic site** | **Grade** | **pT stage** | **N stage** | **p50** | **p65** | **IκBα** |
| **Use of tobacco** | **0.299\*** | 0.117 | −0.115 | −0.144 | 0.069 | 0.152 | **0.223\*** | −**0.218\*** |
| **Oral hygiene** |  | 0.069 | 0.057 | 0.031 | 0.117 | 0.155 | 0.004 | −**0.225\*** |
| **Anatomic site** |  |  | 0.021 | 0.005 | 0.021 | 0.114 | 0.078 | −0.032 |
| **Grade** |  |  |  | **0.351\*\*** | **0.245\*** | −0.177 | 0.187 | 0.186 |
| **pT stage** |  |  |  |  | −0.092 | 0.106 | 0.05 | 0.175 |
| **N stage** |  |  |  |  |  | 0.143 | 0.77 | −0.121 |
| ***p50*** |  |  |  |  |  |  | **0.249\*** | −**0.308\*\*** |
| ***p65*** |  |  |  |  |  |  |  | −**0.592\*\***  |
| **IκBα inhibitor** |  |  |  |  |  |  |  |  |

The expression levels ofp50*,* p65, and IκBα inhibitorfor HNC cases, based on the relative protein level. 8th TNM staging system; pT, N-stage, lymph node involvement, M-stage; metastasize.**\****P* < 0.05.**†**Spearman’s correlation coefficients were calculated via SPSS software. The *P* values were computed using one-way ANOVA and χ2-test.pT: Primary tumor.

**Supplementary Table 2: Expression analysis of NF-κB, p50, p65, and IκBα inhibitor in HPV positive and negative head and neck tumors by performing IHC.**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **HPV DNA** | **NF-κB, p50 IHC staining intensity** | *P* **value** | **NF-κB, p65 IHC staining intensity** | *P***-value** | **IκBα inhibitor IHC staining intensity** | *P***-value** |
| **Weak** | **Moderate** | **Strong** | **Weak** | **Moderate** | **Strong** | **Weak** | **Moderate** | **Strong** |
| **HPV positive**  | 1 | 6 | 30 | < 0.05 | 0 | 12 | 25 | < 0.05 | 24 | 7 | 6 | < 0.05 |
| **HPV negative** | 12 | 61 | 42 | 10 | 56 | 49 | 46 | 55 | 14 |

IHC expression of NF-κB, p50, and p65 showed nuclear staining, IκBα inhibitor showed cytoplasmic staining, the results are significant at *P* < 0.05. HPV: Human papillomavirus; IHC: Immunohistochemistry.