

Supplementary information

Reduced growth and proliferation dynamics of nasal epithelial stem/progenitor cells in nasal polyps *in vitro*

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Table S1 Correlation between age and measurements of cell proliferation

Subject	Diagnosis	Sex	Age	CFE (%)				Doubling time			
				P0	P1	P2	P3	P0	P1	P2	P3
1	NP	M	54	10.5	22.1	13.4	3.8	33.1	19.8	32.3	76.1
2	NP	M	50	1.7	20.1	6.4	0.6	33.8	17.9	49.9	44.6
3	NP	M	46	0.7	6.2	5.6	NA	53.0	38.7	27.0	NA
4	NP	M	50	5.9	7.1	3.0	NA	36.5	22.3	42.8	NA
5	Control	M	25	7.3	35.3	18.8	12.9	16.9	13.3	16.4	22.1
6	Control	F	45	8.9	24.8	12.9	3.9	30.3	12.7	28.1	16.9
7	Control	M	42	21.7	28.6	18.7	12.5	14.4	15.2	19.7	21.6
8	Control	M	50	4.1	27.2	19.4	14.5	18.5	16.1	20.5	26.8
Correlation with Age*				NS	NS	NS	NS	NS	NS	NS	NS

* Relationship between age and data of CFE/doubling time in each passage were analyzed by Pearson correlation method. A *p*-value less than 0.05 was considered significant. *NS*, non-significant. *NA*, not applicable.

Figure Legends

Figure S1 Representative pictures for staining of KRT14 in both cell cultures and tissues. KRT14 was double stained with p63 (A) and Ki67 (B) in the colonies. Double staining of KRT14 with p63 in tissue sections from healthy control (C) and while only in the tissue sections from NP patients (D). Original magnification for pictures A & B at 200× and for pictures C, D at 200×, respectively (scale bar =50 μm).

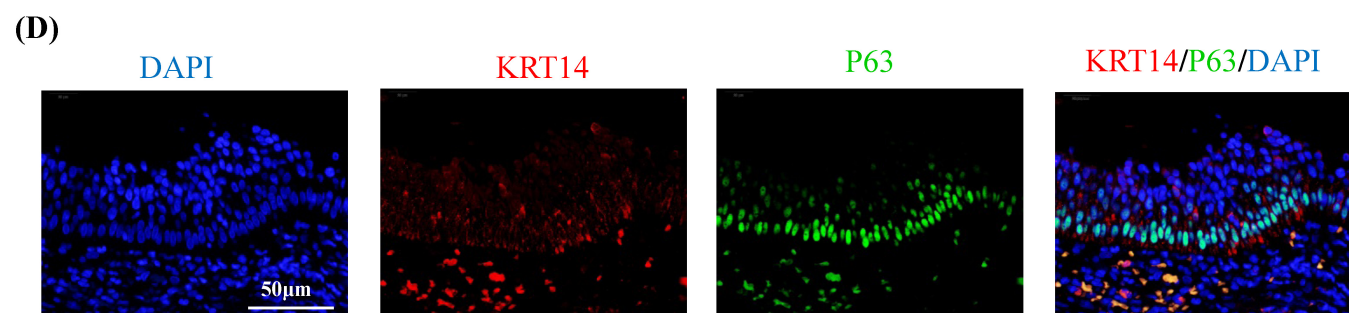
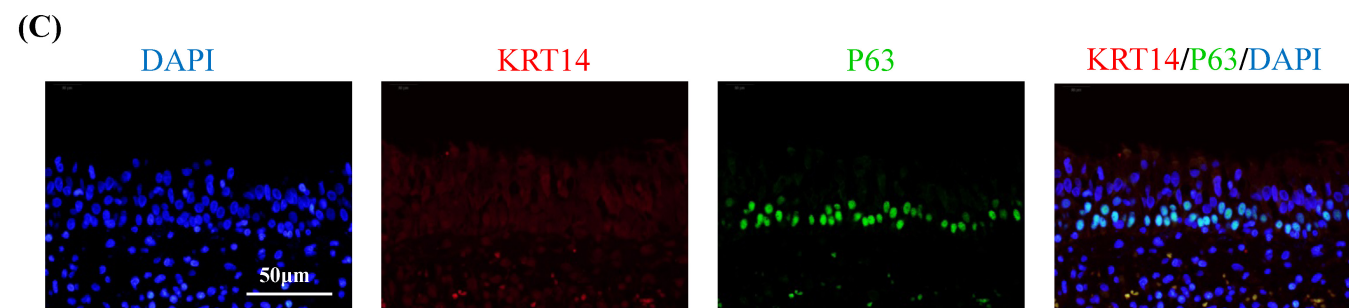
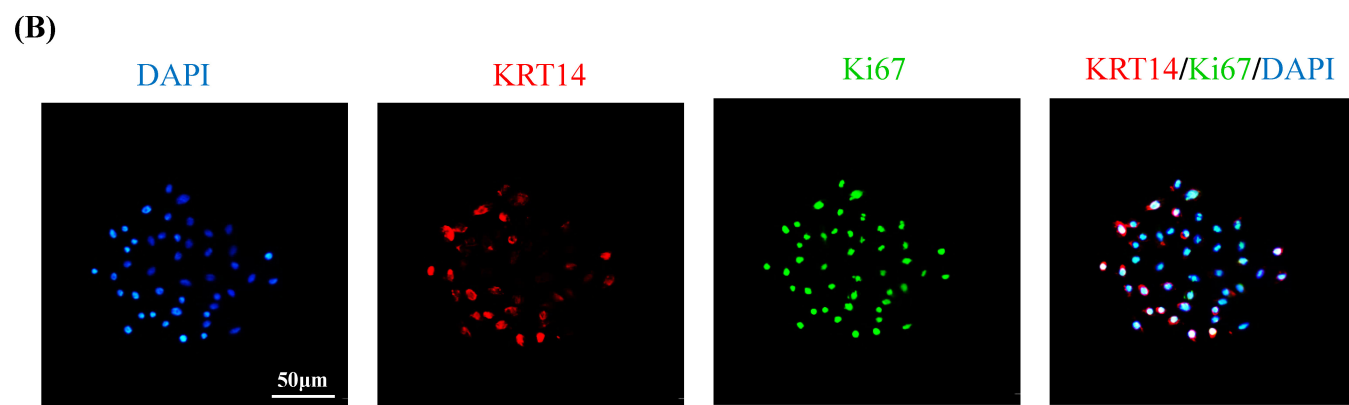
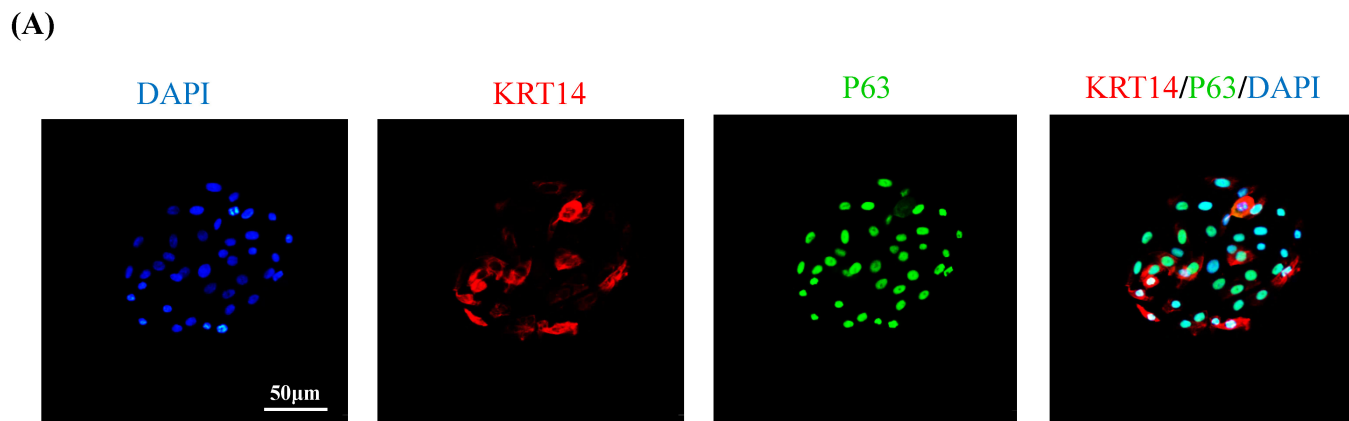
Figure S2 Representative pictures showed the cells with “fried-egg” shape (A) and showed the β-galactosidase (β-gal) staining in panel (B): a colony of P1 cells (a), in a colony of mitomycin C-induced P1 cells as a positive control for the staining (b), in the colonies of P3 cells from NP samples (c & d), in the colonies of P3 cells from a control sample (e). All the β-gal staining photos were captured at 200× magnification.

(scale bar =50 μm).

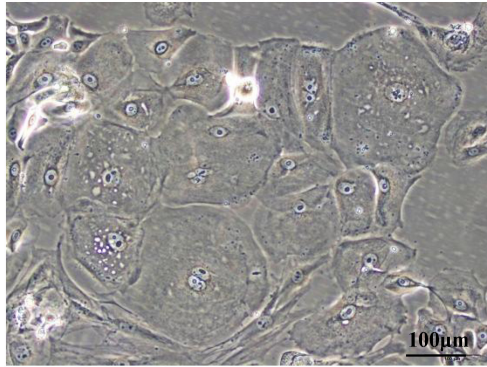
Figure S3 Comparison of Ki67⁺/p63⁺ cell percentage between NP and control tissues. Statistical analyses were performed with Mann-Whitney test. The data are present as percentage (median, 25th-75th percentile) in the plot.

Figure S4 Representative pictures for observation of colony-forming efficiency (A-B) and doubling time (C-E). More colonies were found in cultures from healthy controls (A) as compared to those from patients with nasal polyposis (B). “*” represents the colonies which matched our criteria to be considered a “positive” colony. Original magnification for pictures A and B, 100 \times (scale bar =100 μm).. Pictures C, D and E were taken for the same colony at different time points (Day1, Day2, Day3), which were used for evaluation of doubling time. Original magnification for pictures C, D, and E, 200 \times (scale bar =50 μm).

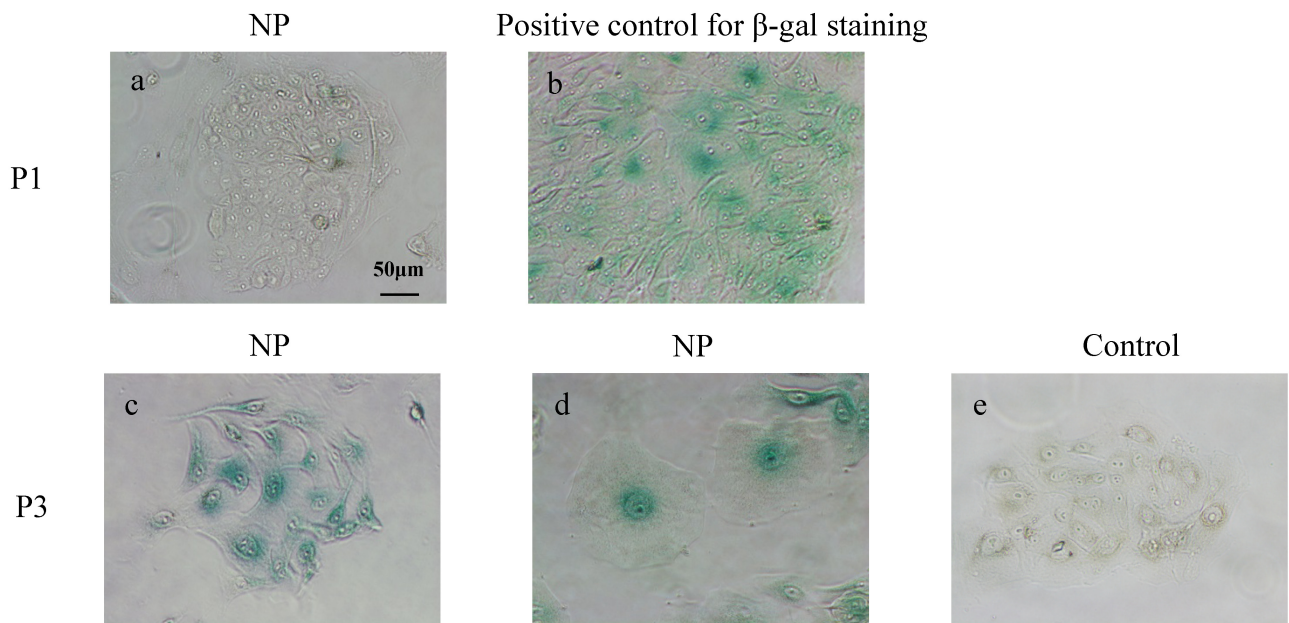
Figure S5 Cell proliferation assay using CyQUANT[®] kit was performed in hNESPCs from NP and control samples during passage 0 (P0) to P3. Each data point was presented as mean \pm SE.



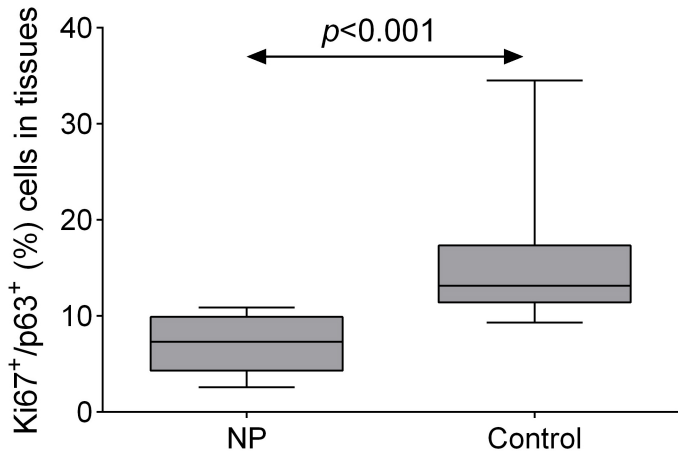
(A)



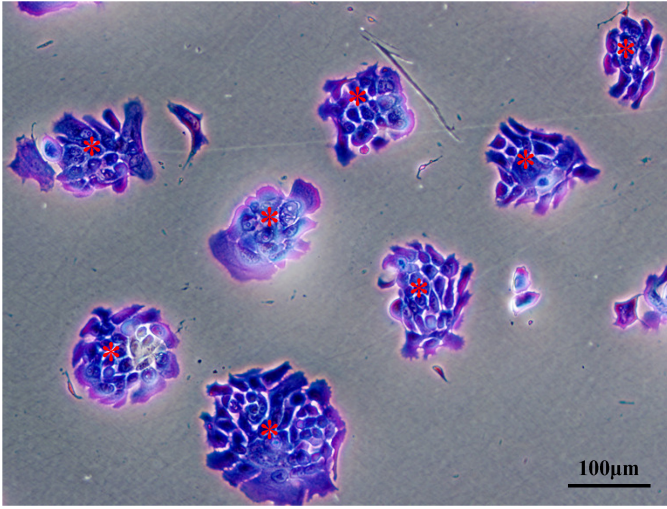
(B)



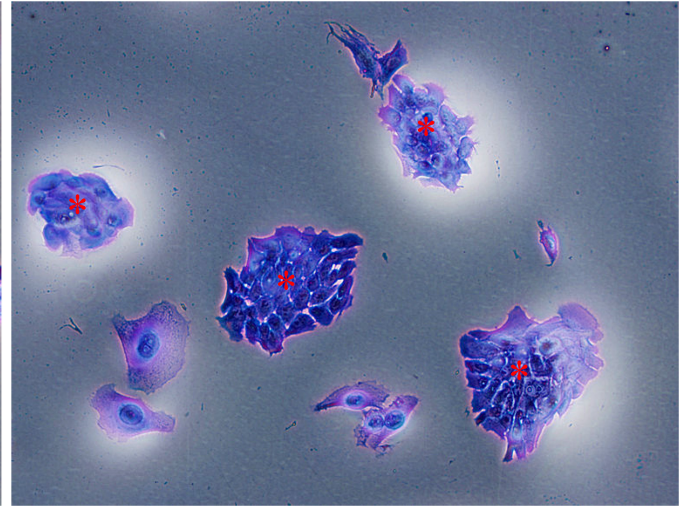
Percentage of Ki67⁺/p63⁺ cells



(A)



(B)



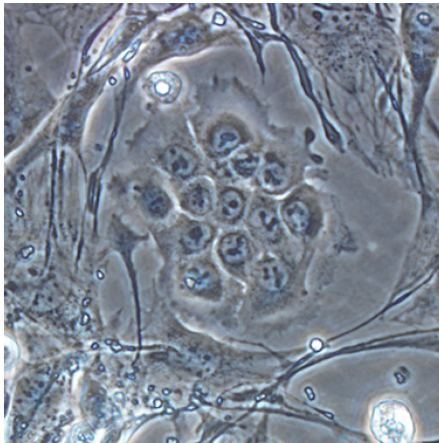
(C)

Day1



(D)

Day2



(E)

Day3

