## Supplementary Material

**Table S1:** Anti-proliferative and anti-inflammatory potential of 10 plant extracts used in folk medicines.

| Plant extract | Cell viability HPK, $EC_{80}$ | Anti-proliferative effect Pso-like NHK.1, $EC_{50}$ | Inhibition of IL-6 Pso-like HPK, $EC_{50}$ | Inhibition of IL-8 Pso-like HPK, $EC_{50}$ |
|---|---|---|---|---|
| Asiatic pennywort (*Centella asiatica*) | 168.5 ± 4.33 µg/ml | 198.80 ± 1.71 µg/ml | no anti-inflammatory effect | 133.90 ± 1.51 µg/ml |
| Brahmi (*Bacopa monniera* L.) | 84.02 ± 1.35 µg/ml | 158.80 ± 1.15 µg/ml | 38.21 ± 1.12 µg/ml | 66.36 ± 1.16 µg/ml |
| Buckbean (*Menyanthes trifoliata* L.) | 73.7 ± 4.44 µg/ml | 34.75 ± 1.14 µg/ml | 5.16 ± 1.75 µg/ml | 6.43 ± 2.91 µg/ml |
| Gentian (*Gentiana lutea*) | 187.8 ± 1.35 µg/ml | 229.00 ± 1.41 µg/ml | no anti-inflammatory effect | 303.60 ± 1.39 µg/ml |
| Guggul (*Commiphora mukul*) | 25.83 ± 1.22 µg/ml | 24.97 ± 1.60 µg/ml | 11.53 ± 2.32 µg/ml | 14.62 ± 1.43 µg/ml |
| Hop (*Humulus lupulus*) | 0.22 ± 1.15 µg/ml | 0.20 ± 1.14 µg/ml | 0.38 ± 0.01 µg/ml | 0.84 ± 0.14 µg/ml |
| St John's wort (*Hypericum perforatum)* | 0.35 ± 1.08 µg/ml | 0.69 ± 1.06 µg/ml | 0.34 ± 0.23 µg/ml | 0.65 ± 0.004 µg/ml |
| Mango ginger (*Curcuma amada)* | 2.12 ± 1.16 µg/ml | 3.95 ± 1.06 µg/ml | 2.12 ± 1.09 µg/ml | 2.08 ± 1.08 µg/ml |
| Purple coneflower (*Echinacea purpura*) | 61.36 ± 1.18 µg/ml | 227.10 ± 1.98 µg/ml | 55.67 ± 6.32 µg/ml | 4.85 ± 1.38 µg/ml |
| Sweet indraja (*Wrightia tinctoria*) | no effect on cell viability until 400 µg/ml | no anti-proliferative effect | 133.30 ± 1.08 µg/ml | 124.30 µg/ml ± 1.28 µg/ml |
| **Controls** | | | | |
| Dithranol | 0.03 ± 0.01 µg/ml | 0.07 ± 0.19 | 0.02 ± 0.001 µg/ml | 0.01 ± 0.01 µg/ml |

Cells were treated with the corresponding extracts in a range from 0.2 to 400 µg/mL. For cell viability tests, HPKs were incubated with the extracts for 24 h and the CellTiter-Glo2.0 Assay was performed (n = 3). For measurement of cell proliferation, psoriasis-like immortalized HPK (iHPK) were generated from iHPK [1,2] using IL-17A, IL-22 and TNF-$\alpha$. These cells were then treated for 24 h with the corresponding extracts ($n$ = 3). The IL-6 and IL-8 protein level was measured by ELISA in the supernatant of psoriasis-like HPKs after 24 h extract treatment ($n$ = 3, technical replicates). $EC_{50}$ (half-maximal effective concentration) and $EC_{80}$ (in the cell viability assay showing 80% viable cells) were calculated using GraphPad Prism.

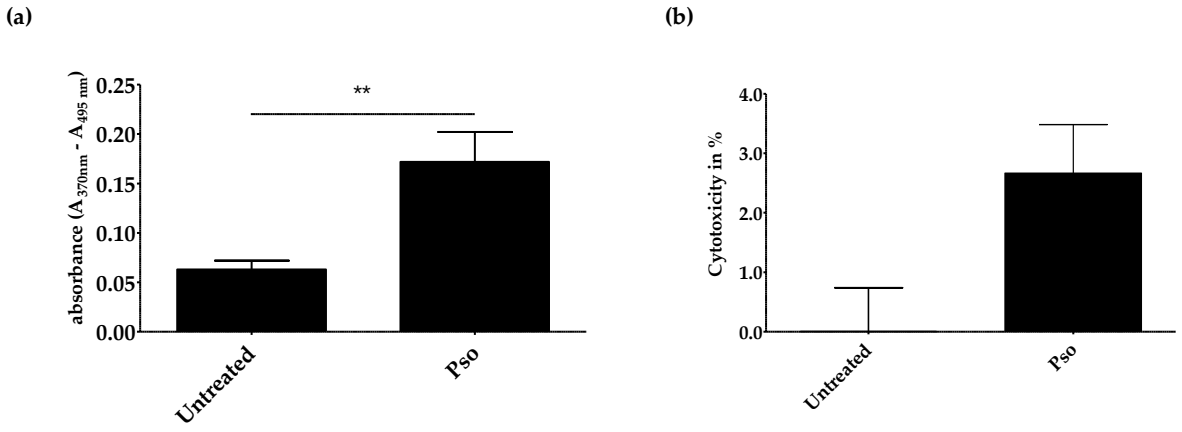


**Figure S1.** Effect of psoriasis cytokines (cytokines (IL-17, IL-22. TNF-$\alpha$, 20 ng/mL) in HPK on cell proliferation and cell cytotoxicity. (**a**) Cell proliferation was measured in untreated HPK or psoriasis-like HPK (HPK treated with psoriasis cytokines for 72 h; Pso) with the BrdU assay ($n$ = 6). (**b**) Cytotoxicity was measured in the cell supernatant of untreated HPK and psoriasis-like HPK (Pso) with the LDH kit from Roche according to the manufacturer's instructions ($n$ = 3).

The treatment with psoriasis cytokines shows a statistically significant increase in cell proliferation with less than 4% cell toxicity, so that the cytotoxicity can be neglected.

## References

1. Sprenger, A.; Küttner, V.; Biniossek, M.L.; Gretzmeier, C.; Boerries, M.; Mack, C.; Has, C.; Bruckner-Tuderman, L.; Dengjel, J. Comparative Quantitation of Proteome Alterations Induced by Aging or Immortalization in Primary Human Fibroblasts and Keratinocytes for Clinical Applications. *Mol. BioSyst.* **2010**, *6*, 1579–1582, doi:10.1039/C003962D.
2. Hawley-Nelson, P.; Vousden, K.H.; Hubbert, N.L.; Lowy, D.R.; Schiller, J.T. HPV16 E6 and E7 Proteins Cooperate to Immortalize Human Foreskin Keratinocytes. *EMBO J.* **1989**, *8*, 3905–3910.