Figure S1. (A) Representative low expression of PKM2 in IHC micrographs of oesophageal squamous cell carcinoma (ESCC). Magnification, x100; scale bar, 20 µm. (B) Representative low expression of PKM2 in IHC micrographs of oesophageal squamous cell carcinoma (ESCC). The magnification is 400x; scale bar represents 5 µm. (C) Representative low expression of pSTAT3<sub>Tyr705</sub> in IHC micrographs of ESCC. Magnification, x100; scale bar, 20 µm. (D) Representative low expression of pSTAT3<sub>Tyr705</sub> in IHC micrographs of ESCC. Magnification, x400; scale bar, 5 µm. (E) Proliferation of recipient Eca109 cells with PBS or Exo-P were performed using CCK-8 assay, "<P<0.01 compared to control, """"P<0.001 compared to control. (F) mRNA expression levels of PKM2 in ESCA and normal oesophageal tissues. Box plots show the mRNA expression of STAT3 in ESCA (red plot) and the corresponding normal tissues (grey plot). Axis units are Log2 (TPM+1). (G) mRNA expression levels of STAT3 in ESCA and normal oesophageal tissues. Box plots show the mRNA expression of STAT3 in ESCA (red plot) and the corresponding normal tissues (grey plot). Axis units are Log2 (TPM+1). (H) Correlation coefficient between STAT3 and PKM in 182 cases. ESCA, oesophageal carcinoma. ESCC, oesophageal squamous cell carcinoma; PKM2, pyruvate kinase isoenzyme type M2; IHC, immunohistochemical.
Table SI. Clinical features of patients with oesophageal squamous cell carcinoma.

| Characteristic          | Patients, N |
|-------------------------|-------------|
| Age                     |             |
| ≤60                     | 20          |
| >60                     | 32          |
| Sex                     |             |
| Male                    | 43          |
| Female                  | 9           |
| T stage                 |             |
| T1-T2                   | 11          |
| T3-T4                   | 41          |
| N stage                 |             |
| N0                      | 20          |
| N1-N3                   | 32          |
| TNM stage               |             |
| II                      | 27          |
| III                     | 25          |
| Differentiation degree  |             |
| Well                    | 3           |
| Moderate                | 35          |
| Poor                    | 14          |
| Gross classification    |             |
| Ulcerative type         | 30          |
| Protrude type           | 4           |
| Medullary type          | 16          |
| Fungating type          | 2           |
Table SII. Clinical features of patients with EIN and HDs.

| Patient | Sex    | Age | Family history | Smoking index | Drinking history | Hypertension |
|---------|--------|-----|----------------|---------------|-----------------|--------------|
| EIN1    | Male   | 63  | No             | 800           | Yes             | No           |
| EIN2    | Male   | 57  | Yes            | 1,200         | No              | Yes          |
| EIN3    | Male   | 65  | No             | 200           | No              | No           |
| EIN4    | Male   | 54  | No             | 600           | Yes             | Yes          |
| EIN5    | Male   | 61  | No             | No            | No              | Yes          |
| EIN6    | Male   | 56  | Yes            | No            | No              | No           |
| HD1     | Male   | 45  | No             | 600           | No              | No           |
| HD2     | Female | 56  | No             | No            | No              | No           |
| HD3     | Male   | 67  | No             | 1,200         | No              | Yes          |
| HD4     | Male   | 51  | Yes            | 600           | No              | Yes          |
| HD5     | Male   | 54  | No             | 300           | No              | No           |
| HD6     | Male   | 67  | No             | No            | No              | No           |
| HD7     | Female | 49  | Yes            | No            | No              | No           |
| HD8     | Male   | 62  | No             | 300           | No              | No           |
| HD9     | Female | 60  | No             | No            | No              | Yes          |
| HD10    | Male   | 61  | No             | No            | Yes             | No           |
| HD11    | Male   | 64  | No             | No            | No              | No           |
| HD12    | Male   | 65  | Yes            | No            | No              | No           |
| HD13    | Male   | 70  | No             | 800           | Yes             | No           |
| HD14    | Female | 57  | No             | No            | No              | Yes          |
| HD15    | Male   | 67  | Yes            | 600           | No              | No           |
| HD16    | Male   | 56  | No             | 300           | No              | Yes          |
| HD17    | Female | 65  | No             | No            | No              | No           |
| HD18    | Male   | 62  | No             | No            | No              | No           |

EIN, esophageal intraepithelial neoplasia; HD, healthy donor.