Supplementary Table 4. The five clusters of keywords on tendon stem cells research from 1991 to 2020

| Cluster 1: Animal study (54) | Cluster 2: Tissue engineering (39) | Cluster 3: Clinical study (30) | Cluster 4: Mechanism research (50) | Cluster 5: Stem cells research (40) |
|-----------------------------|----------------------------------|------------------------------|----------------------------------|----------------------------------|
| acl reconstruction          | adhesion                         | achilles tendinopathy        | activation                       | adipose tissue                   |
| allograft                   | alignment                        | achilles tendon              | age-related-changes              | adipose-tissue                   |
| animal model                | biocompatibility                 | achilles-tendon              | apoptosis                        | articular-cartilage              |
| animal-models               | biomaterials                     | achilles-tendon              | connective-tissue                | autologous chondrocyte implantation |
| anterior cruciate ligament  | bioreactor                       | basic science                | cytokines                        | bone marrow                      |
| arthroscopic repair         | bone                             | biology                      | differentiation                   | bone regeneration                |
| augmentation                | cells                            | delivery                     | endothelial-cells                | bone-marrow                      |
| autograft                   | collagen                         | double-blind                 | expression                       | cartilage                        |
| biomechanical properties    | collagen constructs              | sponge                       | endothelial growth-factor        | extracellular matrix             | cell therapy                     |
| biomechanics                | constructs                       | flexor tendon                | extracellular-matrix             | chondrocytes                     |
| bone morphogenetic protein-2| cross-linking                    | gene therapy                 | fibroblasts                      | chondrogenesis                   |
| cruciate reconstruction     | degradation                      | gene-transfer                | gene                             | chondrogenic differentiation     |
| defect                      | electrospinning                  | growth factor                | gene expression                  | culture                          |
| degeneration                | engineered tendon                | growth factors               | gene-expression                  | defects                          |
| enhancement                 | fabrication                      | growth-factor-i              | growth                           | digital flexor tendon            |
| enthesis                    | fibers                           | growth-factors               | identification                   | equine                          |
| fatty infiltration | fibroblast-growth-factor | healing | inflammation | horse |
|-------------------|--------------------------|---------|--------------|-------|
| follow-up | flexor tendons | heterotopic ossification | injury | horses |
| graft | hydrogel | injection | matrix | human adipose-tissue |
| grafts | in-vitro | management | mechanisms | human bone-marrow |
| growth-factor | ligament | pathogenesis | messenger-rna | implantation |
| growth-factor-beta | mechanical stimulation | platelet-rich plasma | mice | injuries |
| in-vivo | mechanical-properties | prp | migration | intraarticular injection |
| insertion | mechanobiology | rabbit achilles-tendon | muscle | marrow stromal cells |
| integrity | mechanotransduction | randomized controlled-trial | osteoblasts | mesenchymal stem cell |
| knee | nanofiber scaffolds | repair | osteogenic differentiation | mesenchymal stem cells |
| marrow | nanofibers | tendinopathy | phenotype | mesenchymal stromal cells |
| medial ligament | collagen | nanofibrous scaffolds | tendinosis | progenitors | osteoarthritis |
| mesenchymal stem-cells | scaffold | tendon healing | proliferation | osteogenesis |
| model | scaffolds | tendon injury | promotes | progenitor cells |
| morphogenetic protein-2 | silk scaffold | tendon injury | protein | regenerative medicine |
| outcomes | tendon | | rat | stem cell |
| patellar tendon | tendon tissue engineering | | responses | stem cells |
| rabbit | tenogenic differentiation | | scleraxis | stromal cells |
| rabbit model | tissue | | scleraxis expression | tendinitis |
| rat model | tissue engineering | | self-renewal | tendon injuries |
| reconstruction | tissue regeneration | | stem-cells | tendon repair |
| regeneration | vitro | stem/progenitor cells | therapy |
|-------------|-------|-----------------------|---------|
| rotator cuff | vivo   | stimulation            | transplantation |
| rotator cuff repair |     | tenascin-c             | umbilical-cord blood |
| rotator cuff tear |       | tendon differentiation |         |
| rotator cuff tears |       | tendon regeneration |         |
| rupture      |       | tendon stem cells      |         |
| satellite cells |       | tendon stem/progenitor cells |         |
| shoulder     |       | tendon-derived stem cells |         |
| skeletal-muscle |     | tendons                |         |
| small-intestinal submucosa | | tenocyte                |         |
| supraspinatus |       | tenocytes               |         |
| supraspinatus tendon |       | tenomodulin            |         |
| surgical repair |       | tgf-beta               |         |
| tears        |       |                       |         |
| tendon graft  |       |                       |         |
| tendon-bone healing |     |                       |         |
| tunnel       |       |                       |         |