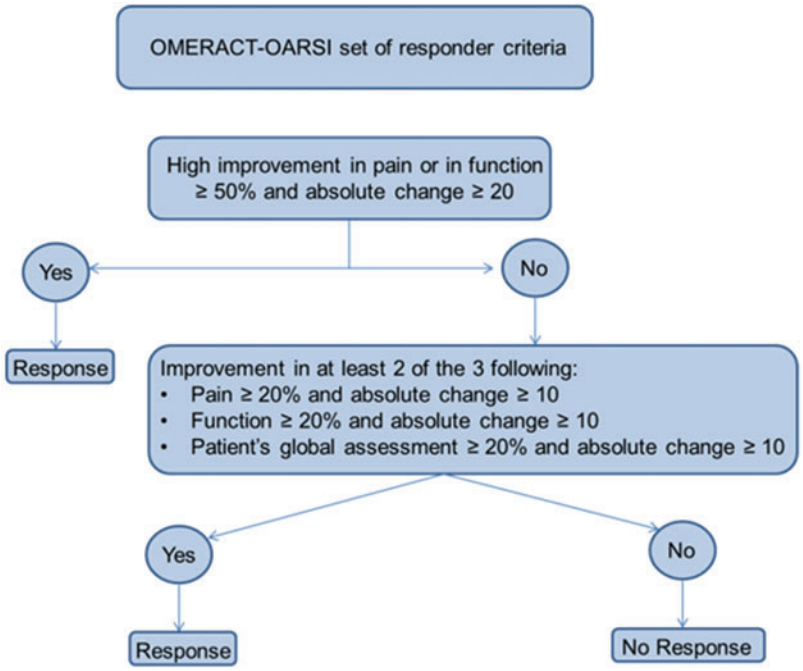
Supplementary Data



SUPPLEMENTARY FIG. S1. OMERACT-OARSI responder criteria.[1] OMERACT-OARSI, Outcome Measures in Rheumatology-Osteoarthritis Research Society International.

Supplementary Table S1. Inclusion Criteria

Inclusion criteria
1. Male or female ≥40 and ≤75 years old at time of injection.
2. A standing radiograph of the knee showing a Kellgren–Lawrence grade of 2 to 4 (within 6 months of screening).
3. Body mass index ≤40 kg/m^2.
4. A Western Ontario and McMaster Universities osteoarthritis index using the Likert scale, Version 3. (WOMAC LK 3.1) pain subscale total score ≥10 and ≤19.
5. Has undergone at least two prior conservative OA therapies without satisfactory pain relief.
6. Patient has failed to get satisfactory pain relief from either HA or steroid injections, or would be considered an appropriate patient to receive either HA or steroid injections

HA, hyaluronic acid; OA, osteoarthritis; WOMAC, Western Ontario and McMaster Universities Osteoarthritis Index.

Supplementary Table S2. Exclusion Criteria

Exclusion criteria
1. Presence of active infection or abnormal effusion in the knee immediately preceding treatment injection.
2. Presence of symptomatic OA in the nonstudy knee.
3. Diagnosed with rheumatoid arthritis, Reiter's syndrome, psoriatic arthritis, gout, ankylosing spondylitis, chondromalacia, and arthritis secondary to other inflammatory diseases, or of metabolic origin; HIV, viral hepatitis; chondrocalcinosis, Paget's disease, villonodular synovitis, and other non-OA joint disease.
4. Disease of spine, hip, or other lower extremity joints of sufficient degree to affect assessment of the index knee.
5. Untreated symptomatic injury of index knee (e.g., acute traumatic injury, anterior cruciate ligament injury, meniscus injury, and cartilage lesion).
6. Knee radiographs showing bone-on-bone or other gross cartilage deficits.
7. Presence of surgical hardware or other foreign body in the index knee.
8. Intra-articular steroid injections in the index knee within 3 months of screening.
9. Intra-articular HA in the index knee within 6 months of screening.
10. Other intra-articular therapy in the index knee within 6 months before screening.
11. Systemic steroid use within 2 weeks of screening.
12. Planned/anticipated surgery of the index knee during the study period.
13. A history of local anesthetic allergy
14. Use of systemic immunosuppressants within 6 weeks of treatment.
15. Currently on anticoagulant therapy.
16. Any documented clinically significant condition (e.g., diabetes and malignancy), finding, or psychiatric illness at screening, which could compromise patient safety or interfere with the assessment of the safety and treatment effects of the study injection.
17. Skin breakdown at the index knee where the injection is planned to take place.
18. Pregnant or nursing mothers, or women who are planning on getting pregnant during the time they will be participating in the study.
19. Known drug or alcohol dependence currently or within the last year.
20. Used any investigational drug or device within 30 days before screening.
21. Used any investigational biologic within 60 days before screening

Supplementary Table S3. APS Amount Calculation

Subject	APS volume (mL)	IL-1ra concentration (pg/mL)	Amount (pg)
APS1	3.0	51,895.5	155,686.4
APS2	2.8	120,783.1	338,192.7
APS3	2.5	49,056.1	122,640.3
APS4	2.8	70,555.8	197,556.2
APS5	3.0	68,304.0	204,912.1
APS6	3.2	38,335.8	122,674.6
APS7	2.8	48,831.8	136,729.0
APS11	3.0	57,616.0	172,848.0
APS12	2.4	80,178.1	192,427.5
APS14	3.0	51,839.4	155,518.3
Average	2.9	63,739.6	179,918.5
Standard deviation	0.2	23,556.3	63,068.3

Supplementary Table S4. IL-1ra:IL-1 β Ratio Calculation

Subject	IL-1ra (pg/mL)	IL-1β (pg/mL)	Ratio
APS1	51,895.5	4.1	12,801.1
APS2	120,783.1	19.0	6,348.3
APS3	49,056.1	88.0	557.7
APS4	70,555.8	6.8	10,331.8
APS5	68,304.0	6.9	9,869.1
APS6	38,335.8	3.3	11,652.2
APS7	48,831.8	7.7	6,352.5
APS11	57,616.0	8.6	6,715.9
APS12	80,178.1	7.3	10,947.3
APS14	51,839.4	12.9	4,028.2
Average	63,739.6	16.5	7,960.4
Standard deviation	23,556.3	25.5	3,833.3

Reference

1. Wanstrath AW, Hettlich BF, Su L, et al. Evaluation of a single intra-articular injection of autologous protein solution for treatment of osteoarthritis in a canine population. Vet Surg. 2016;45:764–774.