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# The ARRIVE guidelines 2.0: author checklist

## The ARRIVE Essential 10

These items are the basic minimum to include in a manuscript. Without this information, readers and reviewers cannot assess the reliability of the findings.

| Item | | Recommendation | Section/line number, or reason for not reporting |
|---|---|---|---|
| **Study design** | 1 | For each experiment, provide brief details of study design including:<br>a. The groups being compared, including control groups. If no control group has been used, the rationale should be stated.<br>b. The experimental unit (e.g. a single animal, litter, or cage of animals). | Method-OA model establishment in rabbits ;Method-In vitro UTMDSV intervention experiment;Method-In vitro PPARγ inhibitor intervention;Method-In vivo intra-articular injection experiment<br>Method-OA model establishment in rabbits |
| **Sample size** | 2 | a. Specify the exact number of experimental units allocated to each group, and the total number in each experiment. Also indicate the total number of animals used.<br>b. Explain how the sample size was decided. Provide details of any *a priori* sample size calculation, if done. | Method- OA model establishment in rabbits;Method-In vivo intra-articular injection experiment;Method-The isolation and culture of chondrocytes<br>Method-OA model establishment in rabbits ;Method-n vivo intra-rticular injection experiment;Method-he isolation and culture of chondrocytes |
| **Inclusion and exclusion criteria** | 3 | a. Describe any criteria used for including and excluding animals (or experimental units) during the experiment, and data points during the analysis. Specify if these criteria were established *a priori.* If no criteria were set, state this explicitly.<br>b. For each experimental group, report any animals, experimental units or data points not included in the analysis and explain why. If there were no exclusions, state so.<br>c. For each analysis, report the exact value of *n* in each experimental group. | No animals died or were excluded during the experiment<br>All data and experimental group are explained in this paper.<br>Method-The isolation and culture of chondrocytes;Method-In vivo intra-articular injection experiment;Method-n vitro UTMDSV intervention experiment;Method-n vitro PPARγ inhibitor intervention; |
| **Randomisation** | 4 | a. State whether randomisation was used to allocate experimental units to control and treatment groups. If done, provide the method used to generate the randomisation sequence.<br>b. Describe the strategy used to minimise potential confounders such as the order of treatments and measurements, or animal/cage location. If confounders were not controlled, state this explicitly. | Rabbits in the in vivo experiment were randomly divided into 4 groups using random number method (n = 6/group).The animal numbers are numbered by ear mark method.<br>All rabbits were raised in separate cage without affecting each other |
| **Blinding** | 5 | Describe who was aware of the group allocation at the different stages of the experiment (during the allocation, the conduct of the experiment, the outcome assessment, and the data analysis). | bbers of each group.<br>According to the allocation of different stages of the experiment, there are corresponding records on the label outside the cage.<br>Correspondingly, the result evaluation and data analysis are analyzed according to the random cage unit |
| **Outcome measures** | 6 | a. Clearly define all outcome measures assessed (e.g. cell death, molecular markers, or behavioural changes).<br>b. For hypothesis-testing studies, specify the primary outcome measure, i.e. the outcome measure that was used to determine the sample size. | Samples were intervened if anorexia, rapid weight loss, mental and behavioral burnout occurred after implantation<br>For ?intra-articular injection ?experiment, according to the effect of 50% increase compared with the positive control group. |
| **Statistical methods** | 7 | a. Provide details of the statistical methods used for each analysis, including software used.<br>b. Describe any methods used to assess whether the data met the assumptions of the statistical approach, and what was done if the assumptions were not met. | All normally distributed data conformance to the normal distributionwere expressed as means and standard deviations (SDs) and standard deviations (SDs). Independent-samples t-teststst-tests and one-way analvsis of variance (ANOVA) followed bv<br>If there were significant behavioral changes in rabbits after surgery, specimens were excluded |
| **Experimental animals** | 8 | a. Provide species-appropriate details of the animals used, including species, strain and substrain, sex, age or developmental stage, and, if relevant, weight.<br>b. Provide further relevant information on the provenance of animals, health/immune status, genetic modification status, genotype, and any previous procedures. | New Zealand white rabbits (male ,six weeks, 2.5 kg– to 3.0 kg<br>Number of animal use permit: DWSY-2100143, the test results are healthy |
| **Experimental procedures** | 9 | For each experimental group, including controls, describe the procedures in enough detail to allow others to replicate them, including:<br>a. What was done, how it was done and what was used.<br>b. When and how often.<br>c. Where (including detail of any acclimatisation periods).<br>d. Why (provide rationale for procedures). | nsity lipoprotein-cholesterol (HDL-C) in rabbit knee synovial fluid were detected by enzyme-marker assay. Aggrecan, collagen II, and PPARγ expression levels were analyzed by Western blotting (WB).<br>4 weeks after ACLT<br>Transfer an animal from a dedicated outlet to a designated animal<br>Sampling is performed in the SPF shielded environment outside the sampling room Collection.<br>It is the requirement of experimental setup to abide the animal ethics and welfare Commission (AEWC) |
| **Results** | 10 | For each experiment conducted, including independent replications, report:<br>a. Summary/descriptive statistics for each experimental group, with a measure of variability where applicable (e.g. mean and SD, or median and range).<br>b. If applicable, the effect size with a confidence interval. | differences between the groups. All statistical analysis was performed using SPSS software (version 21.0, IBM,Corp, Armonk, NY, USA). A p-alue < 0.05 were considered to indicate statistical significance. Statistical significance was set at p < 0.05.<br>The acceptable error rate is 5% |

# The Recommended Set

These items complement the Essential 10 and add important context to the study. Reporting the items in both sets represents best practice.

| Item | | Recommendation | Section/line number, or reason for not reporting |
|---|---|---|---|
| **Abstract** | 11 | Provide an accurate summary of the research objectives, animal species, strain and sex, key methods, principal findings, and study conclusions. | Abstract |
| **Background** | 12 | a. Include sufficient scientific background to understand the rationale and context for the study, and explain the experimental approach.<br>b. Explain how the animal species and model used address the scientific objectives and, where appropriate, the relevance to human biology. | Introduction<br>Introduction |
| **Objectives** | 13 | Clearly describe the research question, research objectives and, where appropriate, specific hypotheses being tested. | Introduction--In this study, we explored t |
| **Ethical statement** | 14 | Provide the name of the ethical review committee or equivalent that has approved the use of animals in this study, and any relevant licence or protocol numbers (if applicable). If ethical approval was not sought or granted, provide a justification. | Methods--Ethical statement |
| **Housing and husbandry** | 15 | Provide details of housing and husbandry conditions, including any environmental enrichment. | Methods-OA model establishment in rabbits |
| **Animal care and monitoring** | 16 | a. Describe any interventions or steps taken in the experimental protocols to reduce pain, suffering and distress.<br>b. Report any expected or unexpected adverse events.<br>c. Describe the humane endpoints established for the study, the signs that were monitored and the frequency of monitoring. If the study did not have humane endpoints, state this. | The rabbits were anesthetized with 10% chloral hydrate at a constant temperature of 36.5°C;After surgery, penicillin (200,000 IU) was delivered via intramuscular injection twice a day for three consecutive days.<br>If there are unexpected adverse events, the samples will be excluded. Then the experiment would be repeated<br>wice per week. If the symptoms are not relieved after nursing, a hunane end point of animal euthanasia is carried out. The way to euthanasia is to inhale excess carbon dioxide. |
| **Interpretation/ scientific implications** | 17 | a. Interpret the results, taking into account the study objectives and hypotheses, current theory and other relevant studies in the literature.<br>b. Comment on the study limitations including potential sources of bias, limitations of the animal model, and imprecision associated with the results. | ; Suematsu, N.; Okamoto, K.; Yudoh, K.; Nakamura, H.; Kato, T. A metabolic aspect of osteoarthritis: lipid as a possible contributor to the pathogenesis of cartilage degradation. Clin Exp Rheumatol 2009, 27, (2), 347-53.)<br>om way. The sample size of each subset includes at least 3 animals in each case, and the acceptable error rate is 5%, which may lead to inaccuracies related to the results |
| **Generalisability/ translation** | 18 | Comment on whether, and how, the findings of this study are likely to generalise to other species or experimental conditions, including any relevance to human biology (where appropriate). | Clinically, joint cavity injection is a common method to treat OA, and the targeted treatment of OA targeting the pathogenesis has great prospects. |
| **Protocol registration** | 19 | Provide a statement indicating whether a protocol (including the research question, key design features, and analysis plan) was prepared before the study, and if and where this protocol was registered. | In vivo experiments were conducted on 41 male New Zealand White Rabbits in the Experimental Animal Center of Nanjing Hospital affiliated to Nanjing Medical University |
| **Data access** | 20 | Provide a statement describing if and where study data are available. | ilable in the online version of the paper. |
| **Declaration of interests** | 21 | a. Declare any potential conflicts of interest, including financial and non-financial. If none exist, this should be stated.<br>b. List all funding sources (including grant identifier) and the role of the funder(s) in the design, analysis and reporting of the study. | There are no conflicts to declare<br>National Natural Science Foundation of China (No. 81772437, 82072541).These projects are the project funds obtained by the authors as the main applicant or main participant. These funds provide fund support for a smooth development. |